V.5#3

JANUARY-FEBRUARY 1952

Volume 5 Number 3

Published Bi-Monthly
by the Association for
Physical and Mental Rehabilitation

in this issue

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Membership: Active, $6.00; Associate, $4.00;
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Printed by C. H. Murdock Printing Co.
347 Madison Avenue
Memphis 3, Tennessee

THE PAN-AMERICAN INSTITUTE OF PHYSICAL EDUCATION

C. H. McCLOY
State University of Iowa

Background: The first of a series of Pan-American Congresses of Physical Education was held in Rio de Janeiro in 1943. It was thought by the physical educators of Latin America that the leaders of physical education in North, Central and South America should get together periodically to talk over their common problems and to formulate methods of improving physical education throughout the western hemisphere.

Three years later, in 1946, the second Pan-American Congress was held in Mexico City. It was soon found that there had been almost no carry-over from the first Congress to the second. It was noted by many of the delegates that most of the resolutions proposed at the first Congress were proposed again a second time at the second Congress. It became increasingly obvious that some international machinery was needed for putting these resolutions into effect, and for promotion continued progress between Congresses. At the second Congress in Mexico City, therefore, the *Pan-American Institute of Physical Education* was formed for the purpose of continuing to work and to attempt to further physical education during the years intervening between Congresses.

At that time the Institute was solely the on-the-job, working alter-ego of the Congress. Officers were elected by the official delegates of the second Congress, and policies were determined in a very general way by the delegates at that Congress. The work of the Institute was placed under the control of a Board of Directors (*Comite Directivo*) of a president and six members, two members from North America, two from Central America and the Caribbean area, and two members from South America. Later, an executive secretary was selected by this Board. It was determined that each country should have a National Committee composed of five members.

Not too much was accomplished by the Institute between the second and third Congresses. This was largely due to the fact that the delegates at the second Congress had little understanding of what was to be done in relation to the Institute, as it had been organized on the last day of the Congress, and there had been little time to discuss procedures. It also proved difficult to accomplish much by correspondence without more of a framework of committees. As a result, a complete overhauling and reorganization of the machinery of the Institute was undertaken by the delegates of the third Congress held at Montevideo, Uruguay in October, 1950.

The present organization stresses the fact that the Pan-American Institute shall be primarily an organization for the promotion of study and research, for consultation, and for the documentation of physical education problems, especially in connection with the problems that concern the American countries. The Pan-American Institute is an autonomous institution composed of those countries that establish National Committees in accordance with the pertinent rules and regulations.

The functions of the Institute are:

(a) To encourge the carrying out of researches relative to physical education. (Physical education is defined as inclusive of physical education, health education, and recreation. Corrective therapy would be included.)

(b) To attempt to carry out studies that have been recommended by the Pan-American Congresses, or those that the Institute considers desirable in accordance with the status and development of physical education in the various countries.

(c) To publicize the results of researches and studies that have been carried out.

(d) To effect collaborations so that the various National Committees and the institutions of the different American countries may have available necessary documentation, especially in reference to the organization and administration of physical education, health education, and recreation.

(e) To maintain relations with institutions, especially American (North, Central and South), dedicated to physical education, sports, recreation, hygiene, and social welfare, and particularly with such organizations as UNESCO, and the World Health Organization, thus to encourage the carrying out of investigations by official and private institutions, and by outstanding persons, on projects related to the objectives of the Institute.

(f) To encourage visits for study, and the exchange of teachers of physical education.

(g) To provide for representation where possible at international meetings that have to do with the affairs relating to the objectives of the Institute.

The Institute now functions under the direction of a Board of Directors, as indicated above. This Board appoints a vice-president, an executive secre-

tary, and the necessary administrative and technical functionaries. The Board continues for a minimum of three years, or until the next Congress held after three years. Its members are elected at the regular assembly of the Institute which is to be held in connection with future Pan-American Congresses. The members are eligible for reelection. The assembly for the election of directors shall be composed of representatives of the National Committees of the Institute.

The National Committees are composed as follows: one delegate appointed by the Board of Directors of the Pan-American Institute; two delegates outstanding in relevant specialties who will be appointed by the delegate of the Pan-American Institute; six representatives; one representative of the Ministry of Education (in the United States this will be the United States Office of Education); one representative of the schools for the training of teachers of physical education, of the association of the teachers of physical education, and of the associations of sports doctors.

The National Committees may function with a minimum of three members. They shall name a president, a vice-president, and a secretary.

These National Committees are charged with encouraging research, helping in the establishment of commissions for research, and trying to have founded in each country an official institute of research in physical education.

At the present time, the officers and Board of Directors are as follows: President, Dr. C. H. McCloy, State University of Iowa, United States; Executive Secretary, Dr. Norma H. Young, State University of Iowa, United States.

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From South America:

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Dr. Luis Bisquertt S., Director, Institute of Physical Education, University of Chile, Santiago de Chile

The official languages in which correspondence is conducted are Spanish, Portuguese, English, and French. In view of the fact that the majority of the countries in the Institute speak Spanish, most of the correspondence and publications are in that language, and the emphasis of the Institute is, at present, largely focused on the programs in the Latin American countries.

Research in physical education in the United States is already well under way. Because of the almost total absence of graduate training in physical education in the Latin American countries, this is not, at present, true there. The emphasis of the next three or four years, therefore, will be on the promotion of research in those countries in which research in physical education is not as yet well established. It is hoped, as more adequate national organizations begin to function in each country, that research will begin to make more progress.

If we are to compare the physical education of most of the countries of Latin America with that of the United States, we would find many marked differences. In the first place, almost each country—with very few exceptions—has what might almost be called a "national system" as distinguished from the general freedom and lack of any organized system that is characteristic of the United States. The writer knows of no country in Latin America, in which physical education is developed at all, in which the current theory is that all one needs to do is play!

Almost all of the well organized countries have national training schools of physical education, but there are not nearly as many as there are in the United States in proportion to the population. For example, in Chile, a country of about six million, there is only one national training school of physical education. In Argentina, a country of about sixteen million, there are two military schools training officers and enlisted men for physical education teaching in the armed forces, and three or four civilian schools of physical education. Uruguay, a country of only about two million and a half, has one military and one civilian school. Brazil, with fifty million, has seven civilian schools and three military schools training physical education teachers. The most of these schools have from two to four year courses, and are excellently organized.

To take a quick over-view of the types of systems in the major Latin American countries, we might start with our southernmost neighbor, Mexico. There, the system reminds the writer very much of the type of German physical education that was current in the Turnvereins in this country about forty years ago, but with a strong admixture of athletics and an indigenous folk dance movement. The type of dance that we would speak of in this country as "modern dance" is not too well developed in Mexico. They have, however, gone much further than we have in the development of an indigenous form of the folk

dance taken over largely from the Spanish, the Indians and the old tradition of the Aztecs and the Incas. One sees beautiful dance spectacles in their elementary and high schools, and everywhere one goes one sees couple dances and demonstrations of that sort. On the whole, the people of Mexico dance many times as much as do the people of the United States.

The physical education of Columbia, Peru and Chile is very closely patterned after the Swedish system in its most modern form, but again with a great deal of the folk dances developed in those countries. That is, the countries of Latin American have not done as we have done in large measure, namely adopted the folk dances of Europe, but have created their own, many of them after the old Spanish tradition, and many after the Indian tradition. Athletics in those countries is not as much developed in the schools as it is in Mexico, but is laregly developed outside in clubs, playgrounds, etc.

The physical education of Argentina, going around the horn, is a mixture of Swedish, the Danish system of Neils Bukh, German apparatus exercise, and modern English and United States games and athletics. They have welded the whole into a very well taught, very well integrated system of physical education. In that country and in Uruguay, the athletic and gymnastic clubs are exceedingly numerous. There are literally thousands of such clubs in each of these countries. They are well equipped, in general, many of them are small, many of them large. The largest athletic club that the writer saw, in Buenos Aires, was a nine story building in the midst of the down-town district, with a large ice skating rink on the top floor. There were then three large gymnasiums, each with a large sports court and at one end, comprising about a quarter of the floor, a place for gymnastics of the apparatus-weightlifting type; then a floor given over to swimming, with a fifty meter by twenty meter pool, then a floor given over exclusively to fencing, with several fencing masters in charge. The rest of the building was given over to social functions. The writer found that the director of that fine gymnastic and fencing club was doing more testing and doing it more effectively than is done in any school or club that the writer knows about in this country.

Little Uruguay, the smallest country in South America, has 2,500 athletic clubs! Their system was primarily patterned after the United States system that was current a number of years ago at Springfield College. A new element, however, has come into this picture which has been imported from Sweden, and that element is struggling with the United States element at the present time, trying to bring a little bit more of accuracy, precision and dosage into the physical education program of that country. Sports and dance are highly developed.

Going on north, the physical education of Brazil is a strong admixture of athletics plus a system that reminds one a great deal of the French system of Hebert.

In all of these countries there is a tremendous amount of soccer football, and of basketball. It may come as a surprise to readers in this country to know that little Uruguay two years ago won the world's championship in soccer football, defeating the British and other European and North American countries. Uruguay also defeated the best athletic club team of the United States in basketball two years ago! The writer has insufficient knowledge of the systems of the other countries to warrant a statement.

From the standpoint of the sciences related to physical education, there are three areas in which South America has gone beyond what we are doing in this country (there may be more areas than that, but these are three that are known to the writer).

The first of these is in the field of kinesiology. In the United States we have no magazine devoted exclusively to the publications of researches in that field. In South America there are three such magazines.

The second area is that of physiology of exercise. While we are doing relatively well here in that field, the outstanding men in the field of physiology of exercise in the United States are limited to three or four. There are at least a dozen first class specialists in this field in South America. Argentina is especially fortunate in having six or eight first class physiologists devoting practically all their time to research in the field of exercise.

The third area, and that in which the members of this Association will be most interested, is the area of sports medicine. Again we have no publication devoted primarily to sports medicine in this country, while there are three publications devoted exclusively to sports medicine in Latin America, and one to physical medicine and rehabilitation (starred in the list of magazines at the end of this article).

In many of the countries, the development of sports medicine has been in connection with special hospitals for what they call "traumatology." These are something like orthopedic hospitals, but are given over almost exclusively to accident cases, and not particularly given over to the other aspects of orthopedic surgery. Sports physicians, in general, have been the product of interneship and long practice in these hospitals. They have, however, become interested in sports and carried over what they have learned in these hospitals for traumatology into the sports world.

In Brazil the writer found one school, the army school in Rio de Janeiro, which had an eight months

course exclusively devoted to sports medicine. This would not be too different in principle from some of the training courses in this country for physiatrists, except for a much greater emphasis upon exercise therapy. The readers may be interested in an outline of the curriculum. In reading this curriculum it should be remembered that the men pursuing this course are all of them medical graduates who have had medical school courses in surgery, orthopedics, general medicine, physiological chemistry, anatomy and physiology, etc., and who have subsequently spent several years in the practice of medicine in the army. These courses are, therefore, related partly to the anatomy and physiology related to training, and partly to the treatment of athletic injuries. The courses are planned to *supplement* the courses originally taken in medical school, not to review them or duplicate them. The students were also taught the details of methods of coaching in order that they might understand thoroughly the problems faced both by the teacher and by the trainee.

CURRICULUM IN SPORTS MEDICINE OF THE MILITARY SCHOOL OF PHYSICAL EDUCATION OF BRAZIL

Biometrics; Theory—34 hours, Practice—27 hours. (This is essentially a course in physical anthropology with emphasis upon testing and measuring as related to research in sports medicine.)
Bioenergetics; Theory—22 hours, Practice—12 hours. (This would correspond roughly to what we would call a course in nutrition, but is a little bit broader than that in coverage.)
Physiology; Theory—42 hours, Practice—6 hours.
Physiotherapy Massage; Theory—16 hours, Practice—18 hours.
General Orthopedics; Theory—19 hours.
History of Physical Education; 12 hours.
Pedagogy of Physical Education; 30 hours.
Psychology; Theory—19 hours, Laboratory—6 hours.
Aquatic Sports; Swimming—36 hours, Water polo—15 hours, Rowing—15 hours.
Track and Field Athletics; 57 hours.
Gymnastics, Apparatus Work and Weightlifting; 57 hours.
Ball Games; Volleyball—18 hours, Basketball—20 hours, Soccer-Football—19 hours.
Combative Activities; Boxing, Ju-jitsu and Wrestling—25 hours.
Fencing; 20 hours.
Practical Training in Sports; 22 hours.
Practical Training in Gymnastics; 91 hours.
Physical Examinations of the Student; 4 hours.
Medical Examinations of the Student; 9 hours.

The field of corrective therapy apparently has not, as yet, been developed to any large extent in Latin America. It may be of interest, however, to know that the United States War Department has had translated the manual on Physical Reconditioning—Technical Manual 8-292—into the Spanish language, and that book was found in quite a number of the Latin American hospitals. An extensive development of corrective therapy, however, is still to come.

One of the things that impresses people from this country who investigate the physical education of Latin America, is that practically all of the elementary school physical education, in the more prominent countries at least, is taught by *well trained teachers* who are graduates of training schools which, in general, in those countries, are termed "Institutes." In other words, the elementary school physical education is not, as is the common practice in this country, turned over to classroom teachers who, in many cases, have not had even one clock hour of training in how to teach physical education to their pupils. It is taught in those Latin American countries by real experts. The elementary school physical education was much better than we see, in general, in the United States.

The secondary school physical education is also taught by well trained teachers who are, in general, not responsible for the coaching programs of interscholastic sports.

In many of the countries, the playground movement has developed at least on a par with that of the United States. Particularly outstanding in this respect were Mexico, Argentina, Uruguay, and Brazil. (The writer mentions these countries particularly because of the fact that he had opportunity to observe in those countries. It is quite possible that equally good work is being done in some of the other countries, which he was not able to observe.)

Health education is about as far along as it is in this country, but their public health practice is not, as yet, that advanced.

In many ways, the leading countries of Latin America are more concerned with certain social movements in physical education than we are. For example, there is a great concern in the Central American countries, and in Mexico (which is allocated to North America in the Pan-American Institute) and in the northern countries of South America, in the matter of physical education, health education and recreation for the Indians. This can be readily understood in a country like Mexico. According to the 1949 U. N. estimate, with roughly twenty-four million people, only two million were pure white, thirteen million were pure Indian, and the other nine million were mixtures of white and Indian, or mestizos. There is a considerable mixture of this sort in all of Central America and in many of the northern countries of South America. These countries are all interested in doing something for those people. (The racial mixtures in Brazil are chiefly white and Negro.) To the surprise of the writer, in a survey made prior to attempting to organize the committees on physical education, health education, and recreation for the Indians, it was found that this movement is farthest developed by our northern neighbor, Canada, where Major Ian Eisenhardt heads up that work and has it much further along than it is in any of the other countries in this hemisphere. The United States, at the present time, has apparently not even awakened to the need for such a movement!

It is the writer's feeling, after having gotten to

know the very professionally minded colleages in our profession in Latin America, that we will shortly see great progress in those countries along those lines in which they are, at present, somewhat weak. Among these lines will be that of Corrective Therapy. In many ways, they are far ahead of us, and it is the hope of the writer that we in the United States may learn from them to improve the weaker parts of our own program.

It is hoped that those who read Spanish or Portuguese (Brazil) may be interested in reading some of the scientific contributions from those countries, particularly in the magazines on kinesiology and on sports medicine. For those who wish to write for publication, the magazines in Latin America welcome contributions from other countries. It will probably be necessary to have these translated into Spanish or Portuguese. For the information of prospective contributors to Latin American magazines, the writer would like to say that the magazines in Brazil, where the national language is Portuguese, will publish articles in Spanish, a language which is readily read and understood by the Brazilian educators.

The Pan-American Institute marks, in a way, the beginning of an international cooperative movement which, if wisely led, and adequately pushed in the different countries, may lead toward a better physical education in all of its aspects (including Corrective Therapy) than has been the case in the past. The Institute welcomes the cooperation of all constructive thinkers and scientifically minded collaborators.

THE METHOD OF NON-DIRECTIVE PSYCHOTHERAPY

ROBERT S. MORROW
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Because of the valuable information obtained from considering the similarities as well as the differences which exist among the various psychotherapies, a discussion of the analytically oriented therapies should include a presentation of the nondirective method.

For the purpose of simplicity I shall use synonomously the terms psychotherapy and counseling as well as patient and client. Also, while Rogers seems currently to prefer the term "client-centered" to nondirective," I shall, nevertheless, in this paper use the latter, more widely employed expression.

As conceived by Rogers nondirective counseling had its root-origins in the psychoanalytical method. In several instances Rogers[17,19] gives due credit to Freud and those who were responsible for the more recent trends in psychoanalysis, especially Rank and those he influenced such as Taft, Allen and the various members of the "relationship therapy" school. Raskin[15] carefully traces the development of the nondirective method from psychoanalysis, pointing out important differences in addition to the similarities, and Estes[8] describes the close relationship which exists between the work of Rogers and that of the post-Freudians, specifically, Horney, Goldstein, Sullivan, Alexander and French, with the chief difference involving the use of interpretation. Employing as the common therapeutic denominator such factors as catharsis, repression, insight, etc., one could therefore consider the nondirective method as part of the general psychoanalytic system rather than its direct opposite, recognizing that there are important distinctions.

The significance of nondirective therapy, however, is not in its similarity to psychoanalysis but rather in its important contrast. While the outstanding characteristics of traditional analysis include, as a rule, use of free association, interpretation and transference neurosis, none of these is employed intentionally in the nondirective approach. More often one finds in Rogers' method the opposite of these characteristics, as indicated in Gump's[10] comparison of the recording of a series of analytic interviews with nondirective recordings or in Porter's[13] comparison of the more directive cases.

The objections to the basic techniques of formal psychoanalysis seem related to the development of the nondirective method. All of the newer, analytically-oriented therapies have abandoned the free association method, feeling that the face-to-face interview for eliciting repressed material is at least as good as free association. Patients today, in contrast with those of previous generations, seem less reluctant to verbalize important personal matters in a suitable therapeutic relationship. Analysis of various kinds of therapeutic interviews indicates that deeply repressed needs or experiences are in the due course of the psychotherapy directly articulated without the necessity for recourse to free association.

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* Reviewed in the Veterans Administration and published with the approval of the Chief Medical Director. The statement and conclusions offered by the author are the result of his own study and thinking and do not necessarily reflect upon the opinion or policy of the Veterans Administration.

With respect to the use of the transference relationship, the nondirective therapist agrees with explanations which involve the existence of a dynamic interpersonal relationship between patient and therapist. He objects, however, to the deliberate development of this relationship as the key to the therapy. The objections to the transference neurosis are mainly that the projection of infantile impulses on a "shadowy," role-changing therapist is inappropriate to the present relationship, that it encourages excessive dependence on the analyst rather than the patient's own independence, and that it is time-consuming and slows up therapy. In other words, the transference neurosis as such is regarded as unnecessary and develops only as a consequence of the authoritarian role which the psychoanalyst assumes. Once again it might be indicated that contemporary patients in this culture apparently react to psychotherapy differently from the patients treated by Freud and his colleagues. Undoubtedly the nature of their problems and their attitudes toward maladjustment are quite different as are their relationships with parental figures. It is probable this difference in patient attitudes which makes psychotherapy possible without resort to the transference neurosis.

Closely related to the problem of the transference neurosis is the question of frequency of therapy sessions. Apparently only the die-hard analysts still maintain the policy of five to seven sessions a week whereas the members of contemporary analytic schools support the adequacy of less frequent sessions.

The arguments against interpretation and the giving of advice and reassurance are that these interfere with the patient's own development of essential insights, that they represent the therapist's judgment of the situation and not the patient's and, furthermore, that interpretations are frequently resisted thereby delaying achievement of insight. All of the schools of psychoanalysis seem to agree with Freud on the central role of interpretation. Many analysts prefer to follow Freud's recommendation of watchful waiting until the patient "himself has so nearly arrived at it,"[19] while others, feeling perhaps more omniscient, are constantly giving their glib and facile interpretations.

It is a frequently observed phenomenon that following interpretation one can give a clear and valid formulation of the dynamics underlying his condition and still show no improvement. This is apparently due to the fact that interpretation, no matter how accurate, has value to the patient only if it is emotionally as well as intellectually acceptable. Insights are more readily assimilated, are less likely to be purely intellectual, where the patient is encouraged to develop them. This is a principle which is well-established from learning experiments. It is not uncommon, moreover, to see patients who have been treated by several analysts report different interpretations and in some instances contradictory interpretations for the same data.

The nondirective therapist also objects to the taking of formal case histories (which is the practice of many analysts), feeling that a good therapeutic relationship brings out the essential information without recourse to the anamnesis. The routine of the formal history seems to thwart the immediate beginning of therapy and implies that the therapist rather than the patient from the very beginning assumes responsibility for defining the problem areas. While there are many psychoanalysts who spend considerable time and effort analyzing the childhood experiences of the patient there are likewise many psychotherapists, including those of the nondirective school, who prefer to focus mostly on the contemporary difficulties. Childhood development is considered pertinent only when the patient relates it to the present complaints.

These important differences serve as background for consideration of the methodology of nondirective psychotherapy. The basic premise is that all individuals have inherent constructive forces, a drive toward mental health, and the proper therapeutic atmosphere can help to release these forces of growth from the psychopathology which restrains them. This involves concentration on the individual and not on his problem or symptoms. Rogers in several instances[17, 18, 19] and others as well, (i.e. Combs,[4] Snyder,[26] etc.) have listed as the necessary steps in this nondirective therapeutic relationship the following*:

The patient incoming to the therapist for help is placed at once in a patient-centered relationship in which he quickly perceives that the therapeutic hour is *his* hour to talk or do as he wishes, free from probing questions, history-taking, criticism, directing, interpreting or verbalized reassurance. He encounters a warm, accepting and permissive therapist who encourages him to discuss his problem at his own level and pace. The patient decides on the areas which he wishes to discuss or to avoid and there is no special selection of material or areas for discussion such as occurs in the dream analysis of psychoanalysis. He also decides the number of visits, the termination of therapy, etc. From the outset the patient is encouraged to assume the main responsibility in the therapeutic relationship.

Since the patient's emotional attitudes and feelings are the key concern of this therapy, the therapist's role is mainly to accept and clarify the feelings that are expressed. In addition to the cathartic experience, the patient, by being fully accepted and having his

*It is, of course, recognized by the author that some of these aspects are not unique for the nondirective method.

feelings and attitudes constantly reflected, becomes able to examine his difficulties more clearly, thereby achieving better emotional self-understanding.

With the gradual awareness of the subtle changes resulting from therapy, the patient is consequently able to go deeper and deeper into his problems—into the unconscious, if you will. Important decisions and actions generally result from this improved self-understanding, and, as a concomitant of this better integration and growth, the development of greater independence takes place. It is the resultant decreasing dependence which leads to the termination of therapy.

Whereas Rogers' earliest publication such as "Counseling and Psychotherapy," seemed to stress the *technique* of nondirective counseling, his more recent publications, including his latest book "Client-Centered Therapy",[21] makes the technique secondary to the therapist's proper *attitude*. Actually, the method becomes an operational aspect of the attitude in that the method is the framework for revealing the genuine interest and attitude of the therapist toward the unqualified acceptance of the patient. The misconceptions regarding nondirective therapy seem to have resulted mainly from the excessive concern with mechanics.

Several interesting investigations into the nature of this non-directive process have been made. Synder[23, 25] was able to show that characteristically there is in the beginning a predominance of negative self-references which give way with insight and better self-understanding to significantly increased positive self-references. In a separate study Raimy[14] confirmed Snyder's general findings by demonstrating in the clearly successful cases a clear-cut shift from self-deprecation to self-approval, as contrasted with the unsuccessful ones who showed at conclusion, as at the start, the same predominance of self-disapproval and ambivalence. Rogers,[22] together with several of his students, conducted a series of six parallel studies of which the most significant conclusion was the demonstrated relationship between the adjustment process and attitudes toward the self. Of very special significance was Sheerer's[22] discovery that the individual's acceptance of himself was related to the degree to which he accepted others.

Findings such as these have led to the development of a theory of personality which subsumes nondirective therapy and which is based on changes in the self-concept. Rogers[20] has indicated that changes in behavior are concomitant with changes in self-perception. Raimy[14] showed that the changes in self-perception were measurable and predictable while Snyder[23, 25] was able to demonstrate the relationship between self-reference and adjustment. Clinically, whether a person just thinks that he is accepted or rejected strongly influences his behavior. Psychotic hallucinations and delusions are known to be related to distorted self-concepts. Combs[5] and Syngg and Combs[28] consider nondirective therapy within the phenomenological frame of reference in the sense that feelings or behavior are viewed in terms of the personal or phenomenal meanings that exist for the patient.

Attempts at objective evaluation by means of projective tests and other devices in the studies by Combs[3, 6] by Muensch[12] and by Reader[16] have supported the clinical evidence of personality improvement. Carr,[22] on the other hand, was not able to find consistent or significant changes. The quality and amount of research which the nondirective school has stimulated has been most impressive. Rogers and his followers were among the first researchers to attempt to evaluate systematically the psychotherapeutic process. The utilization of recordings has been of infinite value for this intensive research.

Some possible limitations to this technique were recognized by Rogers who considered it unfeasible for those with whom contact could not be established, i.e., feebleminded, psychotic and brain-damaged patients as well as those whose independence and freedom of adjustment were considerably blocked by being in military service or in institutions; also, the extremely young or extremely old. More recently Snyder[24] reported that Rogers in personal correspondence expressed the feeling that the technique may be useful for psychotic patients in a "controlled environment."

In fact, the nondirective method has been applied to a greater variety of clinical problems than the frequently-heard criticism has predicted of it, in stating that the effectiveness of this method is limited solely to college-level counseling problems. Hobbs in Rogers' "Client-Centered Therapy"[21] reports gratifying preliminary results with the adaptation of this technique to group therapy involving various types of individuals and problems. Axline[1] has well demonstarted its usefulness in children. Bixler[2] achieved results with this method in a reading disability case. Morrow [11] showed its applicability to the work in vocational adjustment. Curran[7] used it successfully on allergy patients; Snyder et al[27] in their Casebook demonstrated in detail its application to a variety of cases and Snyder[26] in his extensive summary article on psychotherapeutic counseling gives additional references regarding the areas in which nondirective counseling and psychotherapy have been used.

Possibilities for the future might include more intensive investigation of its use with severe psychoneurotics and out-patient (ambulatory) psychotics. Both as Personal Counselor and Clinical Psychologist I have had most encouraging experiences with this technique in common neuroses and behavioral disorders. Because of my tentatively successful experience

with ambulatory schizophrenics I feel strongly the need for further study of its efficacy with this type of psychotic patient. Since nondirective psychotherapy is regarded essentially as representative of a way of democratic living, one may wonder, however, whether it could be as effective in cultures less permissive than ours.

In this brief presentation I have attempted to describe in highlight the method of nondirective psychotherapy and its relationship to the analytically-oriented therapies. I should like to indicate that the mentioned criticisms of psychoanalysis were directed mainly against its traditional, orthodox form. Justification is felt for revising some of the methods and concepts advocated by Freud and his followers. The reasons given here are that patients' attitudes toward psychotherapy have undergone remarkable revision and that we have learned much through research and further study. So that while there exists a fairly wide divergence between classical analysis and nondirective psychotherapy, examination of the teachings of the different schools of psychotherapy suggests an increasing tendency toward a gradual coalescence between the modified forms of psychoanalysis and the nondirective method with respect to philosophy and methodology.

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BIBLIOGRAPHY

1. Axline, V. "Play Therapy" Boston: Houghton Mofflin, 1947.
2. Bixler, R. H.—Treatment of a reading problem through nondirective play therapy. J. Consult. Psychol., 1945, 9, 105-118.
3. Combs. A. W.—Follow-up of a counseling case treated by the nondirective method. J. Clin. Psychol., 1945, 1, 147-154.
4. Combs, A. W.—Basic aspects of nondirective therapy. Amer. J. Orthopsychiat., 1946, 16, 689-805.
5. Combs, A. W.—Phenomenological concepts in nondirective therapy, J. Consult. Psychol., 1948, 12, 197-208.
6. Cowen, E. L. and Combs, A. W.—Follow-up study of 32 cases treated by nondirective psychotherapy. J. Abn. and Soc. Psychol., 1950, 45, 232-258.
7. Curran, C. A.—Nondirective counseling in allergic complaints. J. Abn. and Soc. Psychol., 1948, 43, 442-451.
8. Estes, S. G.—Concerning the therapeutic relationship in the dynamics of cure. J. Consult. Psychol. 1948, 12, 76-81.
9. Freud, S.—"An Outline of Psychoanalysis," N. Y., W. W. Norton & Co., 1949.
10. Gump, P. V.—A statistical investigation of one phychoanalytic approach and a comparison of it with nondirective therapy. Columbus: Ohio State Univ., 1944, 63 p. (M. A. Thesis).
11. Morrow, R. S.—The clinical approach in vocational rehabilitation, J. of Phys. and Ment. Rehab. 1949, 3, 28-30.
12. Muensch, G. A.—An evaluation of nondirective psychotherapy by means of the Rorschach and other indices. Appl. Psychol. Monogr. No. 13, 1947, Stanford Univ. Press.
13. Porter, E. H. Jr.—The development and evaluation of a measure of counseling interview procedures. Educ. Psychol. Msmt., 1943, 3, 105-126, 215-238.
14. Rainy, V. R.—Self reference in counseling interviews. J. Consult. Psychol. 1948, 12, 153-163.
15. Raskin, N. J.—The development of nondirective therapy, J. Consult. Psychol., 1948, 12, 92-110.
16. Reader, N.—An investigation into some personality changes occurring in individuals undergoing client-centered therapy. Unpublished Ph.D Thesis, Univ. of Chicago, 1948.
17. Rogers, C. R.—"Counseling and Psychotherapy: Newer Concepts in Practice." Boston, Houghton Mifflin, 1942.
18. Rogers, C. R.—Therapy in guidance clinics. J. Abn. and Soc. Psychol., 1943, 38, 284-9.
19. Rogers, C. R.—Significant aspects of client-centered therapy. The Amer. Psychologist, 1946, 1, 415-422.
20. Rogers, C. R.—Some observations on the organization of personality. The Amer. Psychologist, 1947, 2, 358-368.
21. Rogers, C. R.—"Client Centered Therapy," Boston, Houghton Mifflin, 1951.
22. Rogers, C. R., Raskin, N. J., Seeman, J., Sheerer, E. T., Stock, D., Haigh, G., Hoffman, A. E., and Carr, A. C. A coordinated research in psychotherapy, J. Consult. Psychol., 1949, 13, 149-220.
23. Snyder, W. U.—An investigation of the nature of nondirective psychotherapy. J. Gen. Psychol. 1945, 33, 193-224.
24. Snyder, W. U.—Dr. Thorne's critique of nondirective psychotherapy. J. Abn. and Soc. Psychol., 1945, 40, 336-339.
25. Snyder, W. U.—A comparison of one unsuccessful with four successful nondirectively counseled cases. J. Consult. Psychol., 1947, 11, 38-42.
26. Snyder, W. U.—The present status of psychotherapeutic counseling. Phychol., Bull. 1947, 297-386.
27. Snyder, W. U.—"Casebook of Non-Directive Counseling." Boston: Houghton Mifflin, 1947.
28. Snygg, D. and Combs, A. W.—"Individual Behavior: A New Frame of Reference for Psychology." New York: Harper and Brothers, 1949.

THE APPLICATION OF SEQUENTIAL PATTERNS IN A MUSCLE REEDUCATION PROGRAM

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The problem of muscle reeducation in dealing with neuromuscular disabilities is to reestablish function to the highest possible point of efficiency for the paretic individual.

What does function include?: a. Performance of neuromotor patterns as originally performed by the individual before the onset of his disability; b. Coordination of the impaired muscle with adjacent and related muscles which are not impaired; c. The establishment of a new balance—not an acquisition of new neuromuscular patterns but a reshifting of old patterns to fit the new situation.

In dealing with a paretic muscle one is working with a lessened number of functional motor fibres. Where some fibres remain intact, a lessened amount of muscle power, hence function, remains. It is in these cases that we are concerned with a new muscle reeducation program.

What are the factors involved in training for this motor coordination?

One is making demands of a very wide range on the patient. It is not merely extension or flexion of the knee that is desired—plantar or dorsiflexion of the ankle. A whole series of neuromuscular patterns of long standing is called into play. These patterns have been acquired developmentally through early life and have been synchronized into a highly complicated mechanism under higher cortical control. The nature of the cortical control, however, involves additional factors such as the timing of the nerve impulse, general coordination, proprioceptive coordination, Sherrington's reciprocal innervation, reflex coordination—all of which must be interwoven for smooth functional end result.

The exact periods at which we develop specific motor skills and how we interweave the neuromuscular sequence into total reaction movement has been well worked out by Dr. Arnold Gesell et al.

The two principles worked out by Dr. Gesell and which are applicable in a reeducation program are: a. The individual develops neuromuscular patterns by a process of reciprocal interweaving of flexion and extension components; b. The individual advances from a cephalo-caudal direction, and embryologically from the proximal to the distal parts.

The application of these principles in a practice sequence takes the following form:

1. There is a progression of positions. The supine position is followed by prone, then sitting, standing, and walking.
2. The succession of the movement of muscles is made in the order in which the function originally developed. Flexion precedes extension—followed by abduction and adduction.
3. The advance in a series of movements is made from the cephalocaudal direction, and the progression is from the proximal to the distal parts.

For example: The patient is aided in making a simple prime movement in the supine position. If the sternocleidomastoid muscles are involved neuromuscularly, (paretic in function), the patient rotates bilaterally in the back lying position. His next motion is flexion in the supine position. Developmentally, side rotation of the neck muscles occurs before flexion and extension movements; therefore it is practiced first followed by the movement of flexion and extension which developed subsequently. Still working on the neck muscles, the patient then practices in the prone position, followed by practice in the sitting, standing, and walking attitudes in the progression named.

The speed of progression will vary with each patient. The factor of muscle strength will determine how far one can advance in the developmental scale. A poor deltoid will function in a supine and prone position but will not be able to function any higher in the scale of progression. This will limit the motions performed until such strength develops as to advance into the sitting, standing, and walking positions for abduction of the humerus.

The amount of involvement is another factor which determines the acceleration of progression. If all four extremities are involved, the two principles of direction, namely, cephalo-caudal and proximal to distal parts guide the progression. The upper extremities are complete before the lower extremities are included in the sequence.

If the upper arm is neuromuscularly affected the movements take place as follows: internal rotation, external rotation, abduction, adduction, flexion and extension.

If the entire arm is involved, the upper arm is trained in prime movements before the forearm. The sequence of movement for the forearm is: flexion, extension, pronation and supination. Wrist flexion is followed by extension, then by ulnar flexion and radial flexion. In the hand, flexion, extension of the fingers, index finger and opponens movement follow in the order listed. If there is only trunk involvement, the progression is: flexion extension, lateral flexion followed by extension. If the trunk and upper extremities are involved the trunk movements precede the arm movements—bearing in mind the developmental principle of proximal to distal segments progression. In the lower extremities the following sequence is observed: flexion, outward rotation, extension, adduction, abduction. In the ankle: flexion, extension; In the toes: flexion, extension, abduction, adduction. In the lower extremities of the body the principle of cephalo-caudal direction guides the sequence in the performance of movement.

Not only is prime muscle function performed by each muscle but related groups are practiced in correlation with impaired movement.

For example: if the anterior tibial is of poor muscle strength it is taught to perform motion of dorsi-flexion in relation to plantar flexion. The pull of plantar flexion is practiced in balance with dorsi-flexion so that a new muscle balance is established and the weaker muscle is not victimized by the pull of the stronger opponents. This new balance to be achieved is important from the point of view of total coordination patterns.

In using a muscle reeducation sequence on paretic muscles based upon embryological and developmental patterns as worked out by Gesell, one is retraining original neuromusclar patterns which were once established and which are being reviewed in the order

in which they were originally developed. In this sense, one is performing true reeducation because one is not training new paths but reestablishing former neuromuscular connections. Through this procedure one achieves a threefold objective:

1. Establishment of original function of the impaired muscle to its greatest capacity.
2. Use of the paretic muscle in its original developmental sequence—hence its relationship to other non-impaired groups is reestablished in the scale of normal development.
3. A new muscle balance is achieved—the impaired group of muscles is included in the developmental sequel as well as the unimpaired and hence the original developmental pattern is reviewed in terms of a new balance.

REFERENCES

Ames, L. B.: The Sequential Patterning of Prone Progression in the Human Infant: General Psychological Monograph vol. 119, pp. 409-460, 1937.

Billig, H. E.: The Importance of, and a Method for Restoration of Sherrington's Reciprocal Innervation in Physical Rehabilitation: Paper delivered before American Congress of Physical Medicine in Denver, 1951.

Gesell, Arnold: Prone Progression in the Human Infant: From the photographic library of the Yale Clinic of Child Development—35 mm. film, 1000 ft., 16 mm. 400 ft., 1938.

Reciprocal Interweaving in Neuro-motor Development: Journal Comp. Neurology, vol. 70, No. 2, April 15, 1939.

An Atlas of Infant Behavior: Yale University Press, New Haven, Conn., 1934.

The Tonic Neck Reflex in the Human Infant: Journal of Pediatrics, vol. 11, pp. 455-464, 1938.

Thompson, assisted by C. S. Amatruda: Infant Behavior; Its Genesis and Growth, New York, McGraw Hill, 1934.

The Psychology of Early Growth; Including Norms of Infant Behavior and a Method of Genetic Analysis, New York, Macmillan Co., 1938.

Embryology of Behavior, Harper Bros., 1945.

Halverson, H. M.: The Development of Thumb Opposition in the Human Infant, Journal of Genetic Psychology, pp. 339-361, 1936.

The Ontogenetic Organization of Prone Behavior in Human Infancy, Journal of Genetic Psychology, vol. 56, pp. 247-263, 1940.

Developmental Diagnosis of Infant and Child, vol. 1, No. 1, Jan. 1947.

REHABILITATION OF HEMIPLEGIA

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In the rehabilitation of patients with hemiplegia, it is important to select properly those patients who are likely to respond to treatment. Experience has shown that failures occur more frequently under the following conditions: senility, medical complications prohibiting activity, loss of learning ability, psychoses, lack of motivation, long-standing flexion contractures in the involved lower extremity and sometimes atonicity.

The senile patient is usually a poor rehabilitative risk. The organic structures of the body are worn out and the individual is incapable of meeting the requirements of the necessary exercise. One must differentiate between the weakness which is due to aging and that which is due to atrophy of disuse. Atrophy of disuse can be corrected at any age by exercise. Nevertheless, it must be constantly born in mind that we are dealing with people who are in the catabolic phase of life and the atrophy of disuse is accelerated and is more difficult to overcome. In the selection of patients in the older age group, it is important to distinguish between physiological age and chronological age. The chronological age frequently is of little assistance, as we often find one patient to be sixty years old and the next patient to be sixty-five years young. In other words, it is not uncommon to find sixty-five year old individuals who are physiologically younger than others who are sixty years old.

Medical conditions frequently prohibit rehabilitation. The most common interfering factor is heart failure. Chronic heart failure may not be a contraindication if it can be adequately controlled and if the treatment is conducted within the limits of cardiac compensation.

The most common cause of treatment failure encountered is the loss of learning ability. This important factor can be determined by psychological testing.[1] It is possible, by utilizing a variety of tests, to establish both learning ability and memory retention. If the testing results are equivocal, a therapeutic trial of treatment is indicated. Aphasia must not be mistaken for loss of learning ability. The aphasic patient may have interruption of sensory perception or motor expression with slight memory loss. However, it has been my experience that every patient, with or without aphasia, if the involvement has included cortical and subcortical levels, suffers some degree of intellectual loss and personality change. The amount of cerebral alternation will vary and, while in many cases the change is obvious, in other cases the only comparison is that with the individual's status prior to the onset of hemiplegia whatever the cause. Occasionally one encounters a full-blown psychosis. At other times the psychosis is latent and becomes apparent when the individual is removed to a strange environment. For some reason or other these patients frequently do bet-

ter if they make their initial adjustments in a familiar situation or at least have in their proximity individuals with whom they have some ties of association. As one would expect, in the presence of a psychosis, attempts at rehabilitation are futile.

Motivation is the cornerstone of rehabilitation. Motivation is of two main types: 1. Internal, and 2. External.[2] External motivation is when the impetus to activity is provided by an outside source; internal, when it arises from within the individual himself. Internal motivation is commonly lost in chronic debilitating illnesses. In order to renew it, external motivation must be used as a stimulus. The patient must be instilled with a desire to improve his condition. It is necessary to convince him that he can improve. This is accomplished by demonstrating to the patient that he is capable of performing a movement or an activity which he did not consider possible. The realization that the capability of motion is present serves as a stimulus to internal motivation.

Lower extremity contractures of long duration may prove to be an insurmountable barrier. The hip flexion contracture is usually more interfering than preventing. Knee flexion contractures, if marked, can in some cases make ambulation an impossibility; although, in many instances, if treated early, walking is possible by the use of a long leg brace with a knee lock.

Atonicity or flaccidity of the lower extremity is usually not a barrier. A long leg brace with a knee-lock will usually provide sufficient stabilization to accomplish ambulation.

Rehabilitation is started as soon as the medical condition permits. When hemiplegia is the result of a hemorrhage, rehabilitation will have to wait until all evidence of bleeding ceases. Patients who have suffered from cerebral thrombosis or embolism can be treated within 48 to 96 hours. There is a tendency to be overconservative as to when to initiate treatment. The best index to follow is the neurological signs.

Patients can be divided into three general categories: 1. Flaccid, 2. Paretic, 3. Spastic. The leg usually suffers less than the arm and the prospects for ambulation can be considered good.

The patient with a flaccid paralysis cannot be expected to regain the use of the upper extremity. Since these patients do develop marked atrophy of the involved upper extremity about the region of the shoulder, there is a tendency to subluxation of the humerus. Consequently, it is frequently advisable to utilize an arm sling to prevent this from occurring. As mentioned, the leg is usually less involved than the arm. Occasionally one encounters a patient in whom the leg is too weak to support the body weight. In these individuals, it is necessary to utilize a long leg brace with a knee lock so as to keep the leg from buckling beneath the body weight during ambulation. Usually the musculature of the leg can be strengthened by assistive and, later, resistive exercises. It is not uncommon to find that the brace can be cut down until only a single bar drop foot, or a spring brace can be used. In some cases the brace can be completely eliminated or only a lift on the sole and heel of the shoe worn on the normal foot is required.[3]

The patient with paresis can be expected to obtain functional recovery in the hand; the degree of functional usage will vary with the patient. However, the hand usually will improve to the point where it can be used as a helping hand. In these patients it is important to develop the strength of the musculature. In the upper extremity it is important to be certain that the muscles around the shoulder are strengthened to be sure that there is no subluxation of the shoulder.

In this patient one does not wish to carry the arm in a sling as it would deny the patient the use of the hand. If the muscles are not strengthened, the atrophy around the shoulder girdle and especially in the deltoid muscle will occur rather rapidly as a result of the weakening of the supporting muscles. The rest of the upper extremity should be strengthened so as to increase its functional capacity. Contracture of the shoulder can occur and this is corrected by passive stretching and pulley therapy. The leg requires strengthening. The muscles which should receive emphasis are the hip flexors, hip extensors, knee extensors and the ankle dorsiflexors. Occasionally one finds hip flexion contractures and short hamstrings which require stretching. The paretic patient rarely requires a drop foot brace. One commonly finds that a shoe lift on the shoe worn on the normal foot is all that is required. Occasionally a spring brace can be used.

The patient with spasticity usually can be ambulated. These patients are prone to develop contractures of the shoulder, hip and ankle. Occasionally one encounters flexion contractures of the knee. Knee flexion contractures are difficult to manage. If one succeeds in stretching them, it is best to maintain knee extension by the use of a long leg brace with a knee lock.

Hip flexion contracture requires stretching. Plantar flexion is usually a pseudo-contracture as it disappears when the hip and knee are flexed. This is readily seen during the withdrawal of flexion reflex patterns, when the knee is extended the ankle inverts and plantar flexes. On eliciting the withdrawal or flexion reflex the hip and knee flex and the ankle dorsiflexes. Patients with spasticity usually require a drop foot brace with a 90 degree stop at the ankle. If inversion is marked, they will also require a T strap at the ankle to conteract the inversion. Contracture at the shoulder is treated by manual stretching and by

control over the shoulder and elbow. This is done by pulley therapy. It is important to try to obtain some utilization of the tonic neck reflex.[4] Elbow extension is important in accomplishing some of the self-care activities as putting on and taking off the coat. Treatment of the hand has no more than psychological benefit. While it is important to maintain a range of motion in the joints and prevent contractures, in my experience, attempts at obtaining function in the hand have been futile. The raising of the arm to shoulder level, (90 degrees of elevation), changes the pattern of spasticity so that there is shift of tone from the flexors, internal rotators and adductors to the extensors and abductors.[5] It is sometimes possible by merely elevating the arm to 90 degrees or above to observe the elbow spontaneously extend. If the arm remains flexed, it will frequently be observed to extend spontaneously if the patient makes a strong effort such as squeezing some object with the uninvolved hand. This motion can be further reinforced by utilizing the tonic neck reflex in which the face is turned toward the hemiplegic side. Voluntary elbow extension is easiest when the arm is at shoulder level, or above, and when the head is turned toward the involved side. This can be utilized in training of muscular control, and the arm abductors and elbow extensors can be strengthened. As their muscle power increases the arm can be worked at lower levels until the patient achieves the ability to extend the elbow when the arm is at the side.

The primary objective from the physical point of view is the accomplishment of the activities inherent in daily living. Therefore, the treatment requirements of each patient will vary according to the degree of involvement and whether the patient is flaccid, paretic or spastic.

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BIBLIOGRAPHY

[1]Garrett, J. F.: Personal communication.

[2]Garrett, J. F., Ph.D.; Yamshon, Leonard, J., M.D.: "Some Psychological Implications of the Tonic Neck Reflex in the Rehabilitation of the Hemiplegic."; *Occupational Therapy and Rehabilitation;* Vol. 29, No. 2, April, 1950.

[3]Yamshon, Leonard J., M.D.: "An Aid to Walking for Patients with Spastic Hemiplegia"; *Archives of Physical Medicine;* March, 1950, Volume XXXI, pp. 156-158.

[4]Yamshon, Leonard J., M.D., Machek, Qtaker, M.D. and Covalt, Donald A., M.D.; "The Tonic Neck Reflex in the Hemiplegic"; *Archives of Physical Medicine;* November, 1949, Vol XXX, pp. 706-711.

[5]Yamshon, Leonard J., M.D.: "Position of the Arm in Spastic Hemiplegia"; *Archives of Physical Medicine,* October 1950, Volume XXXI, pp. 658-660.

FACTORS RELATED TO TRAINING OF THE UPPER EXTREMITY AMPUTEE

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Since 1946, a nation-wide research effort in the area of upper extremity prosthetics has been carried on under the leadership of the Advisory Committee on Artificial Limbs of the National Research Council. The focus of attention of this concentrated research program has been on producing better devices for amputee use. The success of the program has been such that a shift in attention has recently been taking place.

At the national conference held in New York City from October 9-12, 1950, the Standing Committee on Upper Extremity Prostheses of the Advisory Committee defined this new trend as follows:

> With the development of terminal devices and arm components capable of affording reasonably satisfactory substitutes for lost functions for many types of arm amputees consideration is focusing on improvement in practices, as exemplified in the responsibilities of the surgeon, the prosthetist, and the therapist.[1].

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[1]Artificial Limb Program; Report of Results of Conference, p. 25.

There seems to be general agreement among authorities on a coordinated program for the rehabilitation of amputees. The program is based on a five point plan which includes 1) psycholigical preparation of the patient 2) adequate surgery 3) after-care of the stump 4) adequate prosthesis and 5) training of the amputee in the use of his prosthesis.[2] There is no doubt that all of these steps and the cooperation required for such a program are essential for good rehabilitative use of a prosthetic device by an amputee. However, it is the last point, amputee training, that we are primarily interested in for the purpose of this paper.

As staff members of the Prosthetic Devices Study of New York University, the authors recently participated in an evaluation study of one of the experimental devices developed under the ACAL program. This test necessitated visiting 21 cities throughout the country and indoctrinating therapists in the amputee

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[2]Henry H. Kessler. "Rehabilitation of the Amputee" in William H. Soden, editor. *Rehabilitation of the Handicapped,* Ronald Press Company, New York, p. 83.

training methods that had been developed for use with the new device. The experience of this and other tests conducted by N.Y.U—P.D.S. has brought out the fact that few therapists have had even brief experience in the training of upper extremity amputees.

Based on the increasing realization of the importance of proper training and the neglect that has been too common in the past, it is felt that it would be profitable to discuss some principles applicable to upper extremity amputee training.

I. Physical Considerations

A. Above Elbow Amputation

The basic functions provided by an above elbow prosthesis are prehension, elbow flexion, and elbow lock. These functions are directly activated and controlled by the amputee's body power. It is obvious that a basic program of muscle strengthening (both pre-and post surgery and pre-and post appliance wearing) is a major factor in producing optimal operation of the prosthesis. Particular attention should be paid to the strength and range of motion of the amputee movements which control the basic A/E prosthetic functions. These movements are as follows:

1. *Forward Flexion of the Humerus*

A/E amputees activate and control flexion of the prosthetic albow with this movement. The major muscles involved in humeral flexion are the remainder of the *coraco-brachialis* and the *anterior-deltoid*. With adequate strength and range of motion and with a relatively small amount of practice, the amputee will be able to attain some degree of smoothness and ease in flexing the prosthetic forearm.

2. *Scapulae Abduction*

For all amputees, mobility of the shoulder girdle is an important factor in controlling and positioning the terminal device. More specifically, prehension movements of the hook or hand are operated by a combination of shoulder shrug (scapulae abduction) and a thrusting movement of the stump. The major muscles involved here are the *serratus anterior*, the *pectoralis minor*, and the *subscapularis* for scapulae movement and the *coraco-brachialis* and *anterior deltoid* for forward thrust of the stump. Pre-prosthetic exercises will help to prevent fatigue once prosthetic training and use are begun.

3. *Extension of the Humerus and Shoulder Depression*

This motion is used to lock and unlock the elbow of Hosmer and Northrop types of A/E artificial arms, in which the elbow lock is operated by cable control thus freeing the other hand for activity. This is a comparatively new development. Many of the arms on the market at present have manually controlled elbow locks which are operated by the amputee's normal hand.

The control motion used with Hosmer and Northrop arms is performed primarily by the inferior fibres of the *latissimus dorsi*, the inferior *trapezius*, the *pectorals*, and the *posterior-deltoid*. With practice, most amputees will be able to lock and unlock the prosthetic elbow with a short, quick extension and depression movement. In some cases, abduction can be introduced as a helping motion to prevent involuntary extension of the elbow during the locking movement. If this is necessary, the abduction should be kept at a minimum.

B. Below Elbow Amputation

The basic functions provided by a B/E prosthesis are prehension and, in the case of more complete devices, pronation and supination. The amputee movements used to conrtol these functions are:

1. *Humeral Flexion, Elbow Extension, and Scapulae Abduction*

The B/E amputee activates prehension in the same manner as the A/E amputee (see No. 2 above) except that the thrusting motion of the arm does a much larger share of the work. The muscles involved are as described above with the addition of the *triceps* and *anconeus* for elbow extension.

2. *Pronation and Supination*

Many of the B/E arms presently available have rigid metal elbow hinges which allow only flexion and extension at the elbow joint. Increasing use is being made, however, of prostheses equipped with flexible elbow hinges or with pronation-supination wrist units. These relatively new devices permit the amputee to make effective use of the remaining pronation and supination in the forearm stump. These movements are performed primarily by the *biceps* and the *pronator teres*. Exercises aimed at the strength and range of forearm rotation should be started as early as possible since this motion is easily lost through disuse.

Besides the control movements used to activate the functions of the prosthesis, the amputee must also locate the prosthesis in space so that the terminal device is brought into working position. The grasping power of the hook or hand is of limited value if the device cannot be placed in proximity to the object to be handled or the task to be performed. The reconditioning and developmental program should not neglect the positioning movements of abduction of the humerus and, in the case of the B/E amputee, flexion and extension of the elbow.

Another point that is often neglected is the isometric contraction of the biceps of the A/E stump and the finger flexors of the B/E stump. These muscles, though no longer able to perform their original functions, should not be allowed to atrophy. The amputee should be taught isometric contraction, which gives him the ability to vary the volume of his stump through voluntary muscle bulging. Once pros-

thetic use is begun, volume control will be important in stabilizing the fit of the socket over the stump.

The above points are specifically directed at excursion and power in muscles which will be used to control the prosthesis. It goes without saying that general body conditioning and posture training may have great physical and psychological benefits which will aid in the total rehabilitation process. The effect of posture on anamputee's use of a prosthesis is seen clearly in the operation of the terminal device. An amputee whose habitual posture is round shouldered (scapulae abducted and protracted) will have less excursion of these body parts for adequate, efficient operation of the prosthetic hand or hook.

III. Fitting and Harnessing

Before discussing some principles of training in the use of a prosthesis, it might be wise to spend time on the harnessing and fitting of the unit to the amputee. No matter how good the mechanical functioning of a device, inefficient harnessing and poor fitting can destroy the usefullness of a prosthesis to the individual. This matter is the responsibility of the prosthetist, but a capable and experienced therapist should be able to aid in determining whether an amputee's inability to perform well is the result of limitations of muscular power and range of motion or limitations imposed by a poor harness or fit which can and should be improved.

The following minimum standards for adequate harnessing and fitting have grown out of two studies recently conducted in this area by the University of California at Los Angeles[3] and by the Prosthetic Testing and Development Laboratory.[4] These can be easily checked by the therapist and if not adequately met, the limbfitter should be consulted for possible prosthetic revisions.

A. Standards for the A/E
   1. The elbow should not lock involuntarily when the amputee walks.
   2. The elbow should not lock involuntarily when the humerus is abducted 60°.
   3. Operation of the elbow lock with the forearm flexed to 90° should not remove the terminal device more than six (6) inches from the desired position of activity.
   4. If the anterior width of the stump (measured at the axilla) multiplied by 1.3 is *less* than the length of the stump (axilla to end), the amputee should be able to raise his prosthesis 90° to the side.
   5. With the forearm flexed to 90°, rotation of prosthesis should be reasonably controlled by rotation of the stump.

B. Standards for both the A/E and the B/E
   1. The amputee should be capable of flexing the forearm through its full mechanical or passive range.
   2. The terminal device should reach full opening when activated with the forearm flexed to 90° and should reach at least 50% of full opening at the mouth and at the fly.[5]

C. Standard for the B/E
   1. Approximately three quarters of the amputee's remaining pronation and supination should be retained when the prosthesis is worn.

In both the UCLA and the PTDL studies, it was noted that the extensive use of leather for harnessing without regard to the occupational needs of the wearer presented objections as being bulky, heavy, malodorous, and causing discoloration of clothing. Where leather is necessary, the use of a liquid nylon coating has been found very helpful in preventing cracks, stiffening, clothing discoloration, and to some extent bad odors.

Not infrequently, amputees suffer dermatological difficulties in the form of chafing or folliculitis arising from the fit and design of the socket and harness. These conditions may be serious enough to warrant medical attention. In all cases, the limbfitter should be consulted for possible prosthetic revisions.

IV. Training in the Use of the Prosthesis

Prosthetic training, begun at the time of delivery of the artifical arm, should include the following areas:

A. Indoctrination and training in gross prosthetic movements

For the above elbow amputee, the gross prosthetic movements which give mobility and stability to the terminal device are flexion and extension of the forearm and locking and unlocking of the elbow. Prosthetic elbow flexion should be a finely controlled movement throughout its range, should be easily performed both slowly and quickly, and should be coordinated with the elbow lock movement. Generally, adequate control of motions about the elbow can be achieved rather quickly with a limited amount of practice. In all cases, practice in elbow flexion should be combined with practice in locking and unlocking the elbow. For those amputees who have cable controlled elbow locks

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[3] "Testing the Upper Extremity Amputee and His Prosthesis," Pamphlet Series: No. 1, prepared by Engineering Artificial Limbs Research, University of California, Los Angeles, California, March 1951.

[4] Ferris, James J., "An Evaluation of Above-Elbow Prosthesis Harnessing," for the Prosthetic Testing and Development Laboratory, Department of Medicine and Surgery, Veterans Administration, Technical Report No. 25-1, September 29, 1950.

[5] In the case of voluntary closing devices such as the APRL Hook and Hand, the word "opening" in this sentence should be changed to "closing."

(the Northrop or Hosmer types), the locking motion should flow smoothly out of the elbow flexion movement.

B. Indoctrination and Training in the Use of the Terminal Device

The major share of training time should be devoted to the operation of the hook or hand. The most important functions of the terminal device are holding, grasping, hooking, and pushing. Training in tne use of the terminal device should include each of these functions, with particular emphasis on holding and grasping which are the most frequently used movements.[6]

C. Practice in Activities of Daily Living

Instruction and drill in the performance of daily living activities must be made meaningful by careful selection of activities on the basis of their value and importance to the amputee. This training is concerned with the integration of individual prosthetic movements into coordinated activity patterns. It should be noted, however, that no amputee should be forced into a rigid, predetermined activity pattern. Rather, the amputee is helped through training to coordinate the functions of his device into the pattern that is most natural and satisfying to him within the framework of correct body mechanics.

D. Instruction in attaching and removing the prosthesis, changing from one terminal device to another, and general care of the appliance.

Specific techniques for this training depend on the types of devices and harnesses used. The training specialist should consult the limbfitter for help and advice if problems arise in this area.

V. The Two Phases of Training

A. Basic Operations

In this beginning phase of training, the objective is to familiarize the amputee with the workings of his appliance and to develop his ability to control the movements of his prosthesis. The amputee first operates his device freely without reference to external objects, concentrating on the kinesthetic appreciation of the body movements necessary for proper operation. The next step involves the introduction of abstract materials such as a placement chart and objects of various geometric shapes and of various materials such as rubber, wood, and metal. With these, the amputee practices to develop his skill in activating and controlling the movements of his prosthesis. When the subject, in his own opinion and in the opinion of the instructor, has adequately mastered the basic prosthetic operations, training proceeds into the second phase.

B. Practical Applications

Once basic operating techniques have been learned, it is important to provide training in the application of these techniques to practical activities of daily living, including occupational needs and social situations. This phase of training has two objectives: 1) to give the amputee confidence in his device and in his ability to use it, and 2) to allow the amputee to explore a wide variety of activites, thereby encouraging him to use his device as a functional aid in restoring him to maximal efficiency.

It must be recognized that the prosthesis cannot begin to fully replace the function of the lost limb. Therefore, the remaining limb of the unilateral amputee will become the dominant side regardless of its pre-amputation status. Almost all activities that can reasonably be performed with one hand will probably be done with the remaining hand rather than with artificial device. The activities chosen for use in the practical applications phase of training should either require the use of two hands or be more socially acceptable when performed bi-manually. Examples of such activities are cutting food with a knife and fork, using a pencil sharpener, unbuttoning the shirt sleeve of the normal arm, opening a pocket knife, and playing cards.

In summary, the authors have presented a general consideration of the physical requirements for optimal prosthetic operation, of the fitting and harnessing of the prosthesis to the amputee, and of the training of the amputee in the basic operations and the practical uses of his appliance. The new developments in prosthetic devices which have grown out of the Advisory Committee on Artificial Limbs' research program, combined with improved prosthetic fitting, harnessing, and training, provide the basis for a more satisfying and valuable program of amputee rehabilitation.

HAVE YOU
RENEWED
FOR '52

SEND ALL CHANGES OF ADDRESS
to
Louis M. Frazier, Jr., 736 South Graham Street
Memphis, Tennessee

[6] "Some Facts and Opinions Concerning Amputees," Report No. 115.08, Research Division, College of Engineering, New York University, p. 1, 2.

The Forum

EDITOR'S NOTE: As stated in the last journal, it will be the purpose of this column to publish selected technical questions and opinions submitted by readers to a panel of experts for reply. These experts will be selected from the various specialties related to the field of rehabilitation.

Answers to the question, "Why do some paraplegic patients who have become expert in crutch walking go home and remain satisfied with a wheel chair existence?"

From: L. L. BURKETT, M.D., Assistant Chief, Paraplegic Service, VAMTG Kennedy Hospital, Memphis, Tenn.

Answer: The primary cause for discontinuing crutch walking at home, in cases other than those who are poorly motivated psychologically, apparently is a lack of conviction on the part of the patient that crutch walking is beneficial to him. This lack of conviction results either from the deficiency of professional personnel in explaining the advantages of crutch walking, or from adverse propaganda circulated by other patients. The deficiency of professional personnel, in turn, often results from lack of conviction on their part as to the practical advantages of crutch walking. In some few cases, the failure to continue crutch walking probably results from inadequate physical set-up at home, or from fear of falling when crutch walking must be undertaken alone. Then, of course, many patients fail to continue crutch walking because of inadequate motivation, which is purely a psychological problem.

A. D. MUELLER, Ph.D., Chief, Clinical Psychologist, VAMTG, Kennedy Hospital, Memphis, Tenn.

I believe the answer to your question can be found in the all-too-common human attitude of taking the path of least resistance. In a study of personality problems of patients with spinal cord injuries, we found that the core problem in rehabilitation was overcoming the resistance, found in many patients, to activities requiring physical and mental effort on their part. Some characteristic reactions of patients were: (1) indifferent, ambivalent, or depressive attitudes toward the future and the possibility it could hold for them socially and vocationally; (2) indecisivness and feelings of insecurity; and (3) assuming a submissive and dependent role in life with accompanying immature emotional behavior. The problem, in my opinion, is essentially one of values and motives. Does the patient think enough of his crutch walking to give him a feeling of independence and security, or does he gain greater emotional satisfaction by assuming a submissive and dependent role in life? Choice between crutch walking or of being satisfied with a wheel chair existence will depend on which of the two attitudes predominantly prevails in the patient.

EMMETT B. PARR AND R. FRANK SMOTHERMAN, Corrective Therapists, VAMTG Kennedy Hospital, Memphis, Tenn.

Before attempting to answer the above question, the qualification of an expert crutch walker must be determined. Our interpretation of an expert crutch walker is; (1) One who has a working knowledge of a variety of crutch gaits which can be used in any situation. (2) One who has sufficient endurance to perform the everyday obstacles confronting him (able to ambulate 1/4 mile) and be balanced well enough for relaxation. (3) One who has mastered necessary self-care activities including the following: able to assume a standing position on crutches from wheel chair or conventional chairs, floor, bed, automobile, and be able to return to the preceding position. He must be able to independently ascend and descend curbs and stairs, or any obstacle which involves ascension and descension.

Very few paraplegic patients reach the status of becoming expert crutch walkers due to: (1) Level of lesion. (2) Physical ability. (3) Low mentality, including the failure to see the need of benefits derived from being an expert crutch walker. (4) Insufficient time, and instruction on advanced techniques in crutch walking. (5) Lack of intestinal fortitude so necessary to overcome a severe disability.

In 1950 and 1951 there have been 474 paraplegic patients treated in Corrective Therapy at VAMTG Memphis, Tennessee. Of this number eleven can be considered as expert crutch walkers. Nine of the eleven are using their crutches in a home situation. The remaining two do not use their crutches because one is in the last quarter of school at Memphis State College and will not risk taking a fall which may interrupt his finishing school. The other lacks the intelligence necessary to realize the physiological value of standing and exercise.

It is our opinion that paraplegic patients who do become expert crutch walkers do not go home and remain satisfied with wheel chair existence.

Next Month's Question.

"How long should the 'so-called' 'warm-up' period be, prior to the giving of training is self care activities, for a patient with a right hemiplegia resulting in a flail arm and leg, aphasia, agraphia, and alexia?"

Presenting next month's question, does not indicate that this month's question has been completely or satisfactorily answered. All interested members should send in their opinions.

"From Other Journals"

KARL MENNINGER, M.D. — "Assumptions and Approaches," **The Menninger Newsletter,* Annual Meeting Issue, 1949.

Note: The following manuscript represents thinking which cannot properly be credited to the author alone. It is the substance of scores, one might well say hundreds, of conferences and discussions at the Menninger Clinic over the past ten years. These have taken place not only under the direct auspices of the research department but across the luncheon table and across the conference table of the clinicians, psychiatrists, psychologists, social workers, nurses and administrators.

Portions of the paper have appeared in various reports and informal proposals made by individuals and departments. Several years ago Dr. David Rapaport, then Director of the Research Department of the Menninger Clinic and now of the Riggs Foundation, Stockbridge, Massachusetts, and Dr. Carl Tillman, then a staff psychiatrist of the Menninger Clinic but now Director of the Piedmont Clinic, Oakland, California, set down some of the material approximately as it appears in this paper.

I am indebted to the persons mentioned and to a great many more that cannot be listed for their contribution to a frame of thinking of which this is is an informal statement.—K. A. M.

Most Psychiatric Research at the present time is of a pre-eminently practical nature. It is directed toward the question: What can we do in a more effective way to improve the personal adjustment of a patient, to re-establish a better inner and inter personality balance?

It might be—it no doubt is—disturbing to a philosopher of science to discover how little consideration we psychiatrists give to the basic principles of psychiatry.Psychiatry like every other science has its postulates, its assumptions. They are the foundation stones upon which the entire structure is built, and yet which themselves stand in constant danger of demolition through the discovery of new facts. Perhaps the most pressing need for research in psychiatry at the present time is in answer to the question: Exactly what do we assume in the delimitation and development of the field of psychological medicine?

I have some convictions about this. I have tried to list for my own use some postulates which I personally believe to be basic ones. I am not sure that the items in the list are correctly defined; I am quite sure that there is some overlapping; I am quite sure that the list is incomplete. But I feel that I have made some progress in my own thinking, and that I am of some help to my students if I have done no more than remind them (and myself) that psychiatry is built upon postulates or assumptions which must be continuously re-examined. I plan to elaborate these elsewhere, and I list them here only to indicate a line of thought. Here they are:

1. In the consideration of human material, psychology is a basic science comparable to physics and chemistry; therefore psychology—plus its societal manifestations, i.e. sociology—must be included in the scientific concept of personality. This could be labeled the principle of the incusion of the phychological disciplines.

2. Since the whole is more than the sum of all its parts, the parts or aspects of the human personality—physical, chemical, psychological and social—must be envisaged as an integrated, balanced totality. This is the well known holistic or total personality principle.

3. Every person is in some respects like all other persons, in some respects like many others, and in some respects like no one else. This is the principle of uniqueness. It does not invalidate the study of personality by means of abstract concepts and scientific as well as artistic methods.

4. The individual is constantly in the process of adjustment internally with respect to forces and components of his own personality and externally with persons, forces and objects with whom he has various kinds of contracts and relationships. This is called the adjustment principle. It is perhaps the most familiar in clinical psychiatry.

5. The total personality tends to maintain itself within optimal conditions with a minimum expenditure of energy; to put it another way, there is a constant internal and external movement aimed at maintaining a homeostatic equilibrium in all spheres—physical, chemical, psychological and social. This can be called the homeostatic principle, it has also been called the stability principle, inertia principle, Cannon principle, and equilibration Freud-Fechner principle, Bernard-principle (Child).

6. By long standing convention and tradition, a physician or his representative has the authority, and empirically the ability, to alter the adjustment or balance (or lack of these) in a patient under his care, by various devices-physical, chemical, psychological and social—with the object of permitting the re-establishment of a more stable total equilibrium. This is the treatment principle.

7. Just as in physics knowledge is derived from the continuum of the physical world and physical events, so in psychology conclusions can be derived from the continuum of the psyche and psychic events. Hence it is possible to study these internal and external adjustment processes, and the internal

*An excerpt from Research in Medical Science, a symposium published by the Macmillan Company in the fall, 1949.

and external manifestations of maladjustment and relate them to one another. This is the continuity principle.

8. Certain patterns of behavior and physical functioning characteristics of the individual are formed in infancy and early childhood and have a tendency to remain constant. This is often called the principle of infantile genesis or the genetic principle.

9. It is possible to explain the continued movement of the personality in the direction of growth, object contact, adjustment, etc., only by the assumption of motivating forces or drives; this makes the personality an energy system and conceives of behavior of all kinds in terms of directed energy. This is the instinct theory or motivation principle.

10. Certain tendencies or patterns occur in repetitive patterns or cycles (cf. catamenia, heartbeats, manic-depressive attacks, etc.). Such cycles tend to act as a counter-force operating against or in the opposite direction from the evolutionary trend or growth of the personality. This is known as the repetition compulsion or cyclic principle.

11. The fluidity and constant state of internal and external adjustment of total personality is modified by the tendency or capacity of the human personality to learn and to remember, and to make modifications in its formulae of adjustment based on previous experience. This can be called the principle of learning and memory.

12. Communication between human beings is of many orders, all of which have to be understood by the student of personality who attempts to record in language various phenomena far more complicated than the melody of a symphony or the fragrance of a rose, which acknowledgedly defy such verbal description. While this task cannot be done accuractly, proper forms plus a sufficient emphasis upon precision and selection of word and expression, enables us to translate into conventional speech and writing phenomena characteristic and explanatory of personality reactions, for the purpose of communicating with colleagues, affecting the patient in certain ways, and guiding movable portions of the patient's environment, including relatives. This could be called the semantic principle.

Upon these postulates we have developed a complicated "science" of psychiatry, the proof of which rests upon five methodological pillars—which as yet stand relatively isolated and uncorrelated. The five pillars are the nosological pillar, the phenomological pillar, the ontogentic pillar, the dynamic or psychoanalytic pillar, and the experimental pillar.

The nosological pillar, although the oldest, is still the least substantial. It is that method of science which attempts to establish order through arrangements and groupings, the establishment of hierarchies. Inevitably it leads to the iniquitous necessity of name calling, from which derives the false sense of security that because we have given something a name we know what it is.

I have listed the phenomenologic or "examinational" method next because it is perhaps the next oldest. Having given names to certain things, the ancients attempted to describe the manifestations and appearances of what they had named.

The ontogenetic method, the study of the case history, arose much later in a vain attempt to establish etiological roots of maladjustment. The "trick" was to coordinate historical events with observed findings (examination).

The psychoanalytic method, supported by deterministic and structural hypotheses, is a comparative infant of less than three score years of age. It has been applied thus far chiefly to maladjusted persons: hence its conclusions regarding "normals" have little substantiated data.

Finally, there is the experimental pillar, the youngest and least tried of all.

PROFESSOR A. V. HILL, "Voluntary Muscle. The Mechanics of its Active State," *The Times Review of the Progress of Science*, 1:13, August, 1951.

The active state of a muscle fibre is initiated by a momentary wave of electric depolarization travelling along its surface. The mechanism of this action is unknown. The fundamental property of active muscle is its tendency to shorten at a rate depending on the load. A constant derived solely from the relation between load and speed is quantitatively the same as the constant representing the observed heat of shortening one centimetre. The meaning of this is obscure, but it can scarcely fail to have fundamental significance. In respect to strength, cross section areas of muscles differ but little, but enormous differences exist in intrinsic speed. The factors which determine the rate of shortening and of relaxation are not known. Mechanical efficiency of muscle is greatest at about one-fifth of the maximum speed. The active muscle must be regarded as a process rather than as a material object. It seems due to a number of cross-linkages between molecular chains. Muscles exert a far greater force when undergoing stretch than when shortening.—PJR

PROFESSOR SIR FREDERIC BARTLETT, "The Measurement of Skill. Human Performance Examined," *The Times Review of the Progress of Science*, 1:6, August, 1951.

For every kind of skill there are key points of adjustment. For bodily skills these have mostly to do with changes in direction of movement and with associated changes of speed. For mental skills, or the mental aspects of bodily skills, they have mostly to

(Continued on Page 23)

EDITORIALS

TERRITORIAL ORGANIZATION PLAN

The proposed territorial organization plan for Chapters, appearing in this issue, should be given both constructive and critical evaluation by the entire membership. Your committee considered distances to be traveled very important, in setting up this plan. If you feel that the coverage is not satisfactory, send your suggestion for changes to Harold M. Robinson, at once.

Regular attendance at meetings, prompt payment of dues and well planned scientific sessions are the corner stones of successful Chapter growth.

The active Chapter will be familiar with community rehabilitation problems and assist in their solution. The active Chapter will recognize the need for adequately trained corrective therapists to meet the needs of a national expansion and interest in rehabilitation that is gaining momentum. The active Chapter will increase the strength of the Association and contribute much to its growing prestige.

A FUTURE FOR THEM

"What they have lost is in their past. Our job is to help them make a future with what they have left." The author of this guide-post for rehabilitation workers is unknown. What a wealth of meaning it contains.

"What they have lost" does not immediately go into their past. Occasionally, many months are required for them to face the full meaning of what has happened. Are we doing our share to assist them in this adjustment? Is our enthusiasm carrying us beyond the realm of what is practical and attainable? Are we coasting along with the patient's hostility to all suggestions that life still has meaning and opportunity, or are we urging this point of view before the adjustment to the disability has taken place?

And when this acceptance has occurred and the next step in his rehabilitation has started, are we over emphasizing the development of power and endurance, at the expense of developing coordination, and retraining in the self care activities associated with daily living? De we spend enough time training the patient to tie his tie or lace his shoes "with what he has left?"

These thoughts must inevitably become a part of the conscious thinking of all therapists who see "helping him make a future with what he has left," as the essential consideration in rehabilitation.

The President Reports

With the passing of 1951 we now look forward to the New Year ahead. I am deeply conscious of the fact that my fellow therapists, possessing an infinite variety of skills and talents, are daily contributing their energy, ability, and ingenuity to the rehabilitation of our disabled patients.

As we review our achievements of the passing year in the field of Physical Medicine and Rehabilitation, it becomes increasingly evident that by our efforts we have added to our prestige as a valuable component of the rehabilitation team. However, we must exercise extreme caution in maintaining our professional dignity and adhering to a code of ethics that will be a credit to our ever growing field.

Many problems confront our profession today. The present conflict in Korea, the ever increasing need for veterans' hospitalization, and the avenues of research being conducted among school children present a growing demand for adjunctive types of therapy. Keeping in mind the demands that will be placed on our field in the years to come, it is imperative that medical guidance be our objective.

Corrective Therapy is a member of the rehabilitation team. The physiatrist is our coach and, as such, prescribes the type of activity to be employed. It is our responsibility not only to maintain a high degree of professional standards but also to advance our technical knowledge in this field. By maintaining active membership in our organization, keeping up to date with medical literature, and writing of research article based on clinical studies we will continue to reflect our professional growth.

LEO BERNER

THE MEN WHO TRY TO DO SOMETHING AND FAIL ARE INFINITELY BETTER THAN THOSE WHO TRY TO DO NOTHING AND SUCCEED.—J. FLOYD JOHNS

THE ONLY TIME YOU MUSN'T FAIL IS THE LAST TIME YOU TRY.—CHAS. KETTERING

Chapter Activities

Editor's Note: Send all reports of Chapter Activities for publication in this column, to Harold M. Robinson, 3411 Birch Lawn Avenue, Roanoke, Va. Send copies of Chapter News Letters to the editor.

PROPOSED PLAN OF TERRITORIAL COVERAGE OF THE CHAPTERS

(Refer to editorial regarding proposed plan)

NEW ENGLAND AREA CHAPTER (*) Frank S. Deyoe, President Cushing V.A. Hospital Framingham, Mass.	Maine, New Hampshire, Vermont, Rhode Island, Massachusetts, Connecticut
NEW YORK STATE CHAPTER (*) Arthur Tauber, President 1166 Burke Ave. Bronx, New York	Sate of New York
NEW YORK (Western Area) CHAPTER (*) Louis Guignard, Chairman 71½ Jefferson Ave. Canandaigua, New York	Western New York prabably divided near Syracuse
NEW YORK (Eastern Area) CHAPTER (*) Wendall Brown, Chairman 1316 Dean St. Brooklyn, New York	Eastern New York probably divided near Syracuse
MIDDLE ATLANTIC AREA CHAPTER (*) Harold M. Robinson, President 3411 Birchlawn Ave. Roanoke, Virginia	States of Pennsylvania, West Virginia, Virgina, Maryland Deleware and D. C.
SOUTH ATLANTIC AREA CHAPTER (**) SOUTH ATLANTIC (Tennessee Area) CHAPTER (**)	States of Tennessee, North Carolina and South Carolina State of Tennessee
SOUTH ATLANTIC (Carolina Area) CHAPTER	States of North and South Carolina
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DELTA AREA CHAPTER (**) Jack Watson, President Corrective Therapy, VAH Alexandria, Louisiana	State of Louisiana and VA installations of Jackson, Biloxi and Gulfport, Mississippi
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GREAT LAKES AREA CHAPTER (**)	States of Wisconsin, Iowa, Minnesota, and VAH, Iron Mountain, Michigan
GREAT LAKES (NORTHERN AREA) CHAPTER (**)	V.A. installations of St. Cloud, Ft. Snelling, and Minneapolis, Minnesota and Tomah, Wisconsin
GREAT LAKES (SOUTHERN AREA) CHAPTER (**) Leonard C. Ewald 3824 6th Street Place Des Moines, Iowa	V.A. installations of States of Iowa, Wisconsin and proposed GM&S Hosp. Iron Mountain, Mich.
CENTRAL AREA CHAPTER (*) Harlan Wood, President 1812 Washburn Ave. Topeka, Kansas	States of Kansas and Missouri
CENTRAL (WESTERN AREA) CHAPTER (**)	V.A. installations of Wadsworth, Topeka and Wichita, Kansas and Excelsior Springs and Kansas City, Kansas
CENTRAL (EASTERN AREA) CHAPTER (**)	V.A. installations of S. Louis, Jefferson Bks. Springfield and Poplar Bluff, Missouri
SOUTH CENTRAL AREA CHAPTER (*) Louis School 6524 Kenwood Rd. Little Rock, Arkansas	States of Arkansas and Oklahoma
TEXAS STATE CHAPTER (*) Boyce J. Nall, Chief, C. T. VAH. Temple, Texas	State of Texas
TEXAS (NORTHERN AREA) CHAPTER (**)	V.A. installations of Ammarillo, Lubbock, Big Springs, Bonham, Dallas and McKinney, Texas
TEXAS (SOUTHERN AREA) CHAPTER (**)	V.A. installations of Waco, Temple, Marlin, Legion, San Antonio and Houston, Texas
NORTH CENTRAL AREA CHAPTER (**)	State of North and South Dakota and Nebraska
NORTH CENTRAL (DAKOTA AREA) CHAPTER (**)	V.A. installations of Minot, Fargo, North Dakota and Ft. Meade and Hot Springs, South Dakota
NORTH CENTRAL (NEBRASKA AREA) CHAPTER (**)	V.A. installations of Sioux Falls, South Dakota and Omaha, Grand Island and Lincoln, Nebraska
ROCKY MOUNTAIN AREA CHAPTER (*) William Staub, Chief C. T. VAH. Cheyenne, Wyoming	States of Montana and Wyoming
GRAND CANYON AREA CHAPTER (**) William N. Neiheisel, Chief C.T. VAH. Denver, Colorado	States of Colorado and Utah
SOUTH-WEST AREA CHAPTER (**)	States of Arizona and New Mexico
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CALIFORNIA AREA CHAPTER (*) (SOUTHERN) Murray Levitta, President 12760 Bessemer St. North Hollywood, California	V.A. installations of Van Nuys, San Fernando, Los Angeles, Wilmington and San Diego, California
CALIFORNIA STATE CHAPTER (**)	Entire state of California and Nevada
CUBA CHAPTER (*) Henry Enrique Briggs Institute De Midicine Fisica Y Rehabilitation Paseo #407 Havana, Cuba	Island of Cuba

NEW ENGLAND CHAPTER

Members of the chapter attended the October meeting of the New England Society of Physical Medicine at the Kenmore Hotel, Boston, Mass. Dr. Sidney Licht, Chief of Professional Division, Boston Office of the VA, gave a very interesting lecture on Physical Medicine in Europe. On his recent trip abroad he visited 40 hospitals in 10 countries and made colored slides of the buildings and clinics. Members were impressed by the work being done in the big European hospitals.

The regular meeting of the New England Chapter of the Association for Physical and Mental Rehabilitation took place at Springfield College, Springfield, Mass., on December 1, 1951. The morning program, conducted by Frank Deyoe, Jr., the chapter presi-

dent, opened with a rehabilitation film. Following the showing of the film a regular business meeting was held where ideas and reports of current clinical events were exchanged among the members. About 50 people attended the luncheon in the college cafeteria which provided special entertainment for the Corrective Therapists.

The afternoon session was opened by Dr. I. Scherer, Chief Psychologist, Northampton Hospital, who spoke on "Issues in Research for Neuropsychiatric Patients Receiving Corrective Therapy." Dr. H. Harrison Clarke, Director of Graduate Study and Research for Springfield College, discussed "Orthopedic Strength Testing," followed by a demonstration of cable tension testing methods.

Officers elected to serve until September 1952 were: President of the Chapter, Frank S. Deyoe, Jr.; Vice-President, Alfred B. Ellison; Secretary-Treasurer, Harvey Williams.

NEW YORK STATE

Eastern Area

The Eastern Area of the New York Chapter of the Association conducted their second fall conference on the evening of November 16, 1951 at the Hotel New Yorker, New York City. Dr. William Bierman, Chief, Physical Medicine at Mt. Sinai Hospital, New York City, and chairman of the meeting, welcomed the more than 150 people to the conference. Dr. Bierman briefly outlined the development of Corrective Therapy and Physical Reconditioning as another contribution of Physical Education to Physical Medicine. He then introduced the guest speaker of the evening, Dr. Howard A. Rusk, Chief, Physical Medicine Rehabilitation, New York University—Bellevue Medical School, and Associate Editor of the New York Times. Dr. Rusk who recently returned from an extensive tour of Europe discussed "Rehabilitation and International Problems." An honorary membership card was presented to Dr. Rusk, who heads the Advisory Board of the Association for Physical and Mental Rehabilitation, by Dr. Abramson, Chief, Physical Medicine Rehabilitation of the Bronx VA Hospital.

Following the scientific session an executive session was held for active members only where Dr. John E. Davis, Chief, Corrective Therapy, Washington, D. C., spoke on "Progress of Corrective Therapy." Leo Berner, President of the National Association for Physical and Mental Rehabilitation, discussed recent developments in the field.

Election of chapter officers was held and the following were elected: Chapter President, Hy Wettstien; Secretary, Eleanor Stone; and Treasurer, Mario Andriola.

The New York Chapter, Eastern Area of the Association for Physical and Mental Rehabilitation, will present their Honorary Membership Award to Dr. Louis Hopewell Bauer, incoming President of the American Medical Association. The presentation will be made at the Association's open meeting at the American Red Cross Headquarters, main auditorium, 315 Lexington Ave., N. Y., N. Y. on Tuesday, December 18, 1951 at 8:15 P.M., by Dr. A. B. C. Knudson, Chief, Physical Medicine Rehabilitation, Veterans Administration, Washington, D. C.

The program includes outstanding Physiatrists and Rehabilitation leaders who will be introduced by the Honorary Chairman, Dr. Bernard Stoll, Assistant Chief, Physical Medicine Rehabilitation, Bronx VA Hospital.

Among those scheduled to speak will be:

(1) Dr. Sidney Licht, President of the New York Society of Physical Medicine. (2) Dr. William Bierman, Chief, Physical Medicine, Mt. Sinai Hospital. (3) Dr. A. B. C. Knudson, Chief, Physical Medicine Rehabilitation, Washington, D. C. (4) Dr. John E. Davis, Chief, Corrective Therapy, VA, Washington, D. C. (5) Mr. Leo Berner, President, National Association for Physical and Mental Rehabilitation.

SOUTHEASTERN CHAPTER

The Southeastern Chapter of the Association has begun to make some real strides as it begins its second year. President Roy Hilliard has completed the organization of the working committees for the year, and the results of the representative assembly election are tabulated. Those elected to the representative assembly are Everett M. Sanders, Jack E. Jones, John Dixon, Paul Fleer, Lester Burrows, George Sloan, and William Clark.

Several outstanding physicians in the Southeastern Area have consented to serve as Medical Advisors for our Chapter. They are William E. Steiner, M.D., E. B. Dunlap, Jr., M.D., Harriett E. Gillette, M.D., and Florence I. Mahoney, M.D. Their guidance and support is very much appreciated.

In addition to other activities, the Southeastern Chapter has instituted a bi-monthly Newsletter to disseminate news of the Area and important National activities among its members. The Editor, Paul F. Fleer, is being ably assisted by Edwin F. Simmons and Associate Editors from every VA Hospital in the Area.

MID-WEST CHAPTER

Mr. Harold M. Robinson has been appointed by the Board of Directors of our National Association to serve as Chairman of the State and Area Chapters with the assistance of these members: Mr. Roger Wessel, VAH, Montrose, N. Y., and Mr. Burr Zachary, Santa Monica, California.

Mr. McCloy, Mr. Carl Purcell and Mr. Leon Edman were elected to the General Assembly by Area Four.

These representatives will be members of the governing body of N.A.P.M.R. which will convene in Milwaukee, Wisc., in 1952 in conjunction with our National Convention.

MIDDLE ATLANTIC CHAPTER

The fifth meeting of the Middle Atlantic Chapter of the Association convened at the Capitol Room, Hotel Statler, Washington, D. C. on November 10, 1951. The morning session was devoted to business meetings of the executive board. Chairmen and members of the Membership, Program, and Publicity Committees met to plan for future activities.

Harold Robinson, President of the chapter, opened the afternoon session to a large attendance. He introduced Dr. John E. Davis, Chief, Corrective Therapy, VA, Washington, D. C., who officially welcomed the large group at the meeting. Mr. Henry Redkey, Vocational Rehabilitation, Federal Security Agency, spoke on "Vocational Rehabilitation and Corrective Therapy." Dr. A. B. C. Knudson, Chief, Physical Medicine Rehabilitation Division, VA, Washington, D. C., presented a very interesting talk on Physical Medicine Rehabilitation which was warmly received by the group. A movie on rehabilitation concluded this very interesting meeting.

LOUISIANA CHAPTER

Jack Watson was elected President of the Louisiana Chapter at an organizational meeting Thursday, November 15, in the VA Hospital, Alexandria, La. Other members elected to serve in the State Chapter were: Cecil Brown of Shreveport, Chairman of Public Relations, and Winton Enlow, Chairman of the Constitution Committee.

Speaking to more than 50 physicians, nurses, rehabilitation and social service workers, Dr. R. Bruce Wallace, Jr., 39th Division Surgeon of the National Guard, told of the need for more rehabilitation centers. Dr. Brewer, Chief of Physical Medicine Rehabilitation, Shreveport VA Hospital, emphasized the role of Corrective Therapy in the rehabilitation program. Col. Walden, Athletic Director of Louisiana College, explained to the group the program of preventive medicine which has been introduced in the many high schools and colleges throughout the state.

Other speakers were: Dr. Moore, Chief, Physical Medicine Rehabilitation at Alexandria; I. G. Sims, Assistant Manager, and Dr. Ellerson, Chief, Professional Services, both at the Alexandria hospital. The Rev. Patrick Fontaine pronounced the invocation.

FROM OTHER JOURNALS

(Cont. From Page 18)

do with deciding when to make a required effort of adjustment. Most important of all is the timing of moves within the sequence. A vastly important part is played by the receptor mechanisms, especially by the eyes and ears, and the organization of information obtained through them. When we talk of "measuring skill" we have to seek an expression of the internal relations — mostly the timing relations — of the distinguishable movements and decisions within the sequence of their natural occurrence, and of their association with some appropriate over all performance score. This is the only sense in which human performance can be "measured."—PJR

A. N. ZINOVIEFF, "Heavy-Resistance Exercises. The 'Oxford Technique,'" *The British Journal of Medicine*, 14:129-132, June, 1951.

In the DeLorme system of "heavy resistance low repetition exercises" to build up power in muscles the maximum weight that can be lifted 10 times is used as the basis for seven to ten sets of lifts. At Oxford Hospital this was found to be exhausting, but the principle involved seem to have much to recommend it. It was decided to begin with the maximum amount usable for 10 repetitions and to reduce the weight at the end of each 10 lifts, 100 lifts constituting a session. In working with patients with wasted and weak quadriceps, these exercises resulted in an average volume increase of 3/8|| every 2-1/2 weeks. Absolute power increased by 10 lbs a week. Well defined pain will not occur and effusion will not increase. Attention to detail in performing the exercise is very important in obtaining the best results and the daily session must be supervised by a remedial gymnast.—PJR

THEODORE H. SATTLER, BILGERT H. MARQUARDT, AND GEORGE M. CUMMINS, JR., "Alkalosis Due to Hyperventilation," *The Journal of the American Medical Association*, 146-1125-26, July 21, 1951.

Breathing in excess of the physiological requirements removes excessive quantities of carbon dioxide from the blood and tends to produce alkalosis. If the pH of the blood rises above normal, tingling of the fingers and toes, numbness of the face followed by carpopedal spasm and ultimately by generalized spasms, convulsions, delirium and disorientation may result. Alkalosis due to hyperventilation may occur from sudden emotional stress, increase in body temperature, prolonged high external temperature, high altitudes and lesions of the basal ganglia.—PJR

Book Reviews

MEDICAL WRITING
by MORRIS FISHBEIN, M.D.

Pp. 292 with illustrations. Maple Press Company, York, Pa. 2nd Ed. 1948

With the experience of being editor of the JAMA, this author has written a book which is primarily directed toward better preparation of medical reports, but he offers a wealth of information for the writer in any field of writing or research.

This book should have a great appeal to the novice writer. The author's first endeavor is a resume on the causes for rejection of manuscripts submitted to the JAMA. From these reasons for rejection one can formulate a few general rules or aims to keep in mind when planning any type of article. The information on style is valuable, and the points stressed are made forceful by the liberal use of examples to emphasize and clarify the points. The subject and the material of medical articles are classified, and a brief description of each is given.

The construction of the manuscript is given brief treatment; it gives a general picture: from the initial outline to various sizes of type that are used. Preparation of a manuscript is covered in a very few pages with illustrations, and the author gives a very valuable set of general rules and standards to follow.

From the many enlightening chapters, the coverage on illustrations and charts is one of the more outstanding features. The techniques presented and the use of these methods to best advantage are well explained. Chapters which will probably be considered extraneous to some are the ones covering grammar, spelling, capitalization, units of measure, periodicals listed in Quarterly Cumulative Index Medicus, etc.

In spite of the amount of material which may not be of particular value to all, this book should offer many procedures, new ideas, and specific notations that will improve anyone's future manuscript.

J.A.B.

PHYSICAL MEDICINE AND REHABILITATION FOR THE CLINICIAN

Edited by FRANK H. KRUSEN, M.D. Pp. 371, 96 figures, 13 tables. Price $6.50. W. B. Saunders Company, Philadelphia and London, 1951.

This book presents a complete treatise on the subject of Physical Medicine and Rehabilitation. It is divided into four major sections: (1) Therapeutic application of physical agents; (2) Diagnostic applications of physical agents and procedures; (3) Clinical aspects of Physical Medicine and Rehabilitation; (4) Fundamentals of anatomy, therapeutic exercises and physiology as related to the field.

Authoritative clinical aspects of the program in practice are presented herein as an outgrowth of the clinical information garnered by outstanding specialists in the field of medicine. Thirty nine different chapters are listed by different authors, of which twenty nine should be of extreme interest to our readers. Such topics as basic principles of therapeutic exercises, factors involved in posture, the physiological effects of bed rest and immobilization, the skeletal muscles in health and disease, functional anatomy of the back, lower limb, upper limb and the fundamentals of anatomy, therapeutic exercises and physiology as related to Physical Medicine Rehabilitation are but a few of the contributions pertinent to our readers. The clinical aspects including the procedures and techniques of therapy administered in the various disease entities are presented in a most comprehensive manner.

The book will be of special interest to the numerous specialists in the field of medicine as well as medical students and therapists in the field of rehabilitation. The readers of this new book will discover that the authoritative discussions of subject matter will be of extreme value in their understanding of this rapidly expanding specialty in medicine, PHYSICAL MEDICINE AND REHABILITATION.

A.D.T.

STANDARD NOMENCLATURE OF DISEASES AND OPERATIONS, FOURTH EDITION

by *A.M.A. Blackiston Company,* Philadelphia, 1952, 1034 pp. $9.00

The revision of this book was carried out by the editors under the general supervision of an Editorial Advisory Board and in collaboration with 24 committees, representing each of the individual or specialty sections of the book.

Under complete revision are the Psychobiologic section, diseases of the Hemic and Lymphatic section and the section on Tumor Etiology.

For purposes of identification of two systems, the Fourth Edition of Standard has included an appendix cross reference of "Standard" code numbers of the "International Statistical Classification of Diseases, Injuries and Causes of Death." The "International" code numbers have also been included parenthetically in the nomenclature section of the book. J.A.B.

MEASUREMENT AND EVALUATION IN PHYSICAL AND RECREATION EDUCATION

by LEONARD A. LARSON Ph.D. and RACHAEL D. YOCUM, Ph.D.

1951, 507 Pp. Illustrated $7.50, C. V. Mosby Company, St. Louis, Mo.

This is one of the most comprehensive and authoritative texts to be published in recent years. The work reflects a tremendous undertaking in the compilation of material for the measurement and evaluation of the individual. The book deals largely with the testing of the physical, however, the authors recognize the fact that the individual performs as a whole unit, and therefore does not disregard the mental, emotional, or social drives.

The measurement and evaluation of programs in the selection, construction, application and interpretation of techniques used to gain information about the individual as accomplished through programs of Health Education, Physical Education, and Corrective Physical Education are established in chapters 1 and 2. Chapter 3 deals with the Cardiovascular-Respiratory functions and presents a step by step procedure of the examination. Photographic illustrations are used in the procedures of the examination, how to record data, correlate, and interpret the information obtained is discussed in detail. Chapters 4 through 7 present performance tests that have a large dependency on organic function. Chapter 8 presents an all over index of performance as related to organic function. The measurement of motor skills, knowledge, and individual adjustment are discussed in chapters 9 through 12 with the last six chapters devoted to the evaluation and analysis of results, and the administration of the program.

A review of all the source literature in the field of tests and measurements is a background of the text. Muscular power, strength, endurance, measures of posture and body mechanics, physical fitness and statistical tools are a few of the topics that will be of interest to our readers. The book will be of great assistance to those attempting to develop a program of testing, and it may be used as a reference book or a source in elementary statistics. A.D.T.

AMPUTATION PROSTHESIS

By Atha Thomas, M.D., F.A.C.S. and Chester C. Haddan

1st Edition Pub. 1945. Pp. 305, 207 Illustrations $8.00 J. B. Lippincott Company, Philadelphia, London

The book is written by two authorities in their respective fields who attempt to present a practical guide to the proper use of prosthetic appliances. One an orthopedic surgeon and the other the President of the Limb Manufacurers of America cooperate to present the anatomic and physiologic considerations, with the principles of alignment and fitting of prosthetic appliances. The description of the various types of prosthesis used for the given form of amputation, and the reasons for the recommendation are presented. Procedures for the proper fitting, care of the stump, stump exercises, walking techniques and rehabilitation are discussed. The book presents basic as well as advanced information that would be of interest to all concerned with the amputee patient.

A.D.T.

"REHABILITATION OF THE TUBERCULOUS"

by H. A. Pattison

Pp. 186, $2.50 cloth. The Livineston Press, Columbia County, N. Y.

Not too many years ago, tuberculosis was the most widespread and clostly of diseases. "Rehabilitation of the Tuberculous" reminds us that only forty years ago, to tell a person that he had the dreaded consumption, was to tell him that in all probability he would die a slow, miserable death. Dr. Pattison traces the rapid advances made in combatting this scourge which has resulted in an astonishing reduction in the death rate due to tuberculosis. Today, thousands of tuberculous patients are getting well and remaining well. To Dr. Pattison, arresting the disease is only half the battle. The remainder of the task is the rehabilitation of the individual.

The United States National Council on Rehabilitation defines rehabilitation as "the restoration of the handicapped to the fullest physical, mental, social, vocational and economic usefulness of which he is capable." Dr. Pattison, with the deftness of a surgeon, cuts deep and cleanly into the problem and comes up with a definition which is remarkably clear, simple and concise. It is: "Rehabilitation means treating a person rather than a lesion."

Breaking this down a bit, "Rehabilitation of the Tuberculous" explains that a program of rehabilitation helps the individual by restoring self-confidence and mental equilibrium; by stabilizing emotions; and by helping him find an incentive to get and increase earning power. This program lengthens life, enhances the joy of living, and pays social dividends to families, to industry and to the state. And in the long run, it reduces sick benefits and unemployment payments. Dr. Pattison states the responsibility of medical rehabilitation as being the scientific organization of convalescence to hasten recovery and guide to purposeful living.

The modern approach to rehabilitation, emphasized in this book, holds one's interest intently from beginning to end. It is written as an aid to physicians, therapists and laymen, and as such is stated in simple English. Dr. Pattison makes no attempt to treat any area exhaustively. Instead his book does a masterful job of touching upon all phases of the subject so that none may be neglected by those charged with the care of the tuberculous.

"Rehabilitation of the Tuberculous" has taken its honored place among the finest books dealing with

(Continued on Page 28)

News and Comments

FROM WASHINGTON

"Spunky" Speer, formerly Area Supervisor, PMRS, Atlanta, has been transferred to Central Office to work with Dr. Cook in Hospital Operations. Mr. Charles Scully, formerly Executive Assistant, PMRS, Roanoke VAH was transferred to Atlanta as Area Supervisor PMRS.

Mr. Van Schoick, Executive Officer, PMRS, Central Office, was a recent visitor to VA installations at Wood, Wisc., Hines, Ill., and Downey, Ill. Van is always welcome since he brings to the service practicable ideas based upon a considerable amount of experience in this field.

Paul E. Eberly, Acting Chief, Corrective Therapy, VAH Lebanon, Pa., has been assigned to a months observational visit to the VAH, Perry Point, Md. Frank Marusak, Chief, C. T. at Perry Point has organized this service which has been favorably commented upon by the consultants as being a most effectively organized service.

Paul Roland upon his recent assignment to Central Office gave an interesting running comment upon a film recently completed in connection with the catatonic clinic organized by Roland and the PMRS staff at Brentwood, Los Angeles Hospital. Paul was invited to speak before various groups while in Central Office.

Major Ray Swanson, formerly President of our Association recently visited Iceland as Assistant Chief, Personal Services Division. Since getting into this work, Ray has become a real world traveler.

Mr. Tom Zwierlein and his wife, Kay, recently returned from a two weeks vacation in Florida. Tom stopped over in Atlanta for the meeting of the Southeastern Area Chapter. He reports a fine trip. He had an opportunity of seeing Ishmael and the C. T. men at Coral Gables. Tom brought greetings to the members of the Southeastern Chapter and reports a fine organization under the leadership of Roy Hilliard. Jack Jones, formerly President of our National Association, was present.

William Staub, Chief C. T. has been moving around of late. Transferred from Lyons, N. J., to Sheridan, Wyoming, he later went to Cheyenne as Chief due to the return to Sheridan of Kramer upon his discharge from the Army. He had hardly gotten settled at Cheyenne when Uncle Sam called him for active duty in the Air Force. The Air Force will get a good man. We extend our very best wishes to Bill in his new assignment.

M. Raymond Robinson has been recently appointed to VAC, Biloxi, Miss., to assist Bob Parrish. Robinson will be assigned to the domiciliary unit. Corrective Therapy is being utilized more every day in these domiciliary units.

Rex Bishop has been transferred from Ft. Benjamin Harrison VAH to VAH, Hot Springs S. D., as Chief, Corrective Therapy in that new installation.

Stanley H. Wertz, C. T., Memphis, Kennedy Hospital, has fabricated a device to lift paraplegic patients in and out of the swimming pool. This is a most helpful asset to more effective rehabilitation methods.

In recent months the following therapists have entered the VA: ,

M. N. Bunanno, VAH, Canandaigua, N. Y.
Fred M. Rutan, VAH, Chamblee, Ga.
J. E. Macombe, VAH, Ft. Custer, Mich.
W. J. Vohaska, VAH, Hines, Ill.
Elmer Naurer, VAH, Hines, Ill.
Harold Morris, VAH, Hines, Ill.
Ernest E. Maines, VAH, Houston, Texas
Clyde Powderly, VAH, Jefferson Barracks, Mo.
Carl R. Langbehn, VAH, Knoxville, Iowa
Joe B. Hunter, VAH, Long Beach, Calif.
J. G. Dunkleberg, VAH, Los Angeles, Calif.
John A. Prince, VAH, Murfreesboro, Tenn.
Steven R. Blaszak, VAH, Roanoke, Va.
Leon C. Elam, VAH, Tuskegee, Ala.
Arlie J. Hughes, VAC, Wood, Wisc.
James A. Bandy, VAMTG, Kennedy Hospital, Memphis, Tenn.

We welcome these men into the field of Corrective Therapy and hope that soon we may include every one on the Association rolls.

John Halbin, Asst. Chief, Corrective Therapy, VAH, Northport, N. Y. has been released from military service and has again taken up his duties at Northport.

Harold A. Palmer has replaced Jack Tractir as Chief, Corrective Therapy at VAH, Houston, Texas. Jack has entered rehabilitation education at the University of Houston.

A great many applications have been received by the Civil Service Commission in Washington, D. C. as a result of the recent examination announcement for EXERCISE THERAPIST GS-5. The applications are presently being graded and the register is being set up. The register should be ample to meet the needs of most areas but it is anticipated that certain areas will still have difficulties recruiting.

VACANCIES

GS-5 vacancies were known on Nov. 1, 1951 at the following VA hospitals: Bath, N. Y., Coatesville, Pa., Lyons, N. J., Brooklyn, N. Y., Ft. Custer, Mich., Den-

ver, Colo., Gulfport, Miss., Memphis, Tenn., Ft. Howard, Md., and Ft. Benjamin Marrison, Ind.

Many of these jobs will be filled very quickly as many appointments were awaiting when the register was announced.

JOB OFFERS IN PHYSICAL MEDICINE

There are probable openings for a GS-5 and possibly a GS-7 in the VAH at Dayton, Ohio.

Gene Jantzen of Bartelso, Illinois, a Corrective Therapist conducting his own clinic in Southern Illinois, writes that, "would like to interview a Corrective Therapist interested in private practice in a small town (300 population). Need help badly—excellent opportunity for advancement, must have deep sincerity concerning C.T. (Please write for appointment)." Any interested party may write Mr. Gene Jantzen, Bartelso, Illinois. Psychiatric Hospital at Glenwood Neurological Rehabilitation Center, Minneapolis, Minn. wants a Corrective Therapist. Starting salary $4800 plus. Write Harry Davis, Minneapolis VA Hospital, Minneapolis, Minn.

BULLETIN FROM NATIONAL SOCIETY FOR CRIPPLED CHILDREN AND ADULTS JUST RECEIVED

The Monthly Bulletin containing a bibliography for workers in the field of Rehabilitation has many interesting abstracts from the Journal of Bone and Joint Surgery, for July 1951 related to AMBULATION EQUIPMENT. These articles should be interesting and helpful to many of our readers. The subscription cost of this Monthly Bulletin is $1.00.

ETHICS COMMITTEE REPORT

Correspondence from Sam Burchart, Chairman, Ethics Committee, indicates the committee is busy formulating a report to the membership. Sam indicates that the committee feels the task is an important one and desires to do a good job. A detailed report could not be prepared for this issue of the Journal but additional information should be available for the March-April issue. Committee members include: *Sam Burchart,* VAH Richmond, Va., chairman; *Oscar Ciner,* VAH Bronx, N. Y., secretary; *Edward Mecchella,* VAH Montrose, N. Y., member; *Edward Hayes,* VAH Ft. Howard, Md., member; and *Chester Nadolski,* VAH Bay Pines, Fla., member.

CONVENTION BRIEFS

A tentative convention program, including the latest developments in the treatment, care, and employment of the handicapped, has been completed. It includes: eleven panel discussions, demonstrations by Corrective Therapy personnel, top-notch medical authorities and speakers in their respective fields, and key industrial executives.

You can't afford to miss this convention, July 8-12, 1952, at the Hotel Schroeder, Milwaukee. A get-together at one of the breweries has been scheduled for Monday evening, July 7. It will give you an opportunity to get acquainted and put you in the spirit of the convention. Bring your wife with you. A special program is being arranged for her: style shows, department store tours, sight-seeing, participation on WTMJ-TV, sports, visits to Milwaukee's new arena, swimming, card parties, square dancing. The convention banquet is scheduled for 7:00 p.m., Thursday evening, July 10. Then, too, that cocktail party on Friday night, July 11, as a final farewell.

PUBLIC RELATIONS COMMITTEE

Dr. Reuben Margolin of Cushing VAH has been appointed chairman of a Public Relations Committee for the Association. Other committee members include Dr. J. Rudd, Chief, PMRS, West Roxbury; K. Denning, CT, Cushing VAH; Major Howard Vire, USA, Valley Forge GH and still to be appointed members from other sections of the country. Among the many duties of this committee will be the task of contacting allied agencies dealing with all phases of rehabilitation, as a liason group, to make available information regarding CT and the Association, and to provide speakers for fraternal and professional organizations.

C. T. CLINIC

The CT staff at Providence recently conducted a clinic for nurses and ward attendants in the proper handling of non-ambulatory and semi-ambulatory patients. Correct lifting and ambulation techniques were taught with emphasis on self-care.

SPRINGFIELD RESEARCH FACILITIES

Springfield College has manpower, very capable research personnel and a research laboratory. The college is interested in receiving suggestions as to how these facilities could be made available for research in problems of physical rehabilitation. Doctors of Physical Medicine and other Rehabilitation personnell are asked to consider the possibility of submitting problems or suggestions to the college. The school has in the past, and is continuing to do, a great deal of scientific investigation for the Armed Services, in athletics and in physical education. We in the field of Rehabilitation need to conduct scientific research—here is an experienced group available to help you with your problem.

PHYSICAL MEDICINE EXHIBIT

Devices for self-help in rehabilitation were displayed in the Framingham Post Office as part of the observance of National Employ the Physically Handicapped week. The exhibit was prepared and set up

by members of the staff of the Physical Medicine Rehabilitation Service of Cushing VAH. Men from this service were on hand to explain the work of rehabilitating disabled veterans and demonstrate the devices which enable disabled persons to function in spite of their handicaps. Among the items exhibited were a wheel chair tripod for a camera, used as training for vocational as well as avocational pursuits, and a magnetic drafting board which was developed only recently by the Physical Medicine Department. Dr. Fritz Freidland, Chief of Physical Medicine, previously displayed some of these items at the National meeting of the Congress of Physical Medicine in Denver, Colorado.

CLASSIFYING FUNCTION OF PHYS. ED.

Dr. H. Harrison Clarke of Springfield College, who is a member of a sub-committee of the Committee on Education for the Congress of Physical Medicine, and also a member of the Committee on Adapted Physical Education and Recreation, reports that some progress is being made in classifying the function of Physical Education in the total Rehabilitation picture. A great deal of co-operative work is still to be done, but he feels much has been accomplished so far. This job of classification and understanding is undoubtedly the most important one facing us at this time.

OCCUPATIONAL THERAPY MEETING—JOURNAL REPRESENTED

Al Ellison represented the Journal of the Association for Physical & Mental Rehabilitation at the Institute on Medical Literature. "How to Read, Write and Use It," which followed the annual convention of the American Occupational Therapy Association at Hotel Wentworth-by-the-Sea, Portsmouth, N. H. Over one hundred people attended this institute.

QUALIFIED THERAPISTS IN DEMAND

The graduate major course of Physical Education and Recreation in Rehabilitation at Springfield College completed its fourth year in May. A total of fourteen men participated and all who desired jobs have been placed in work with handicapped. Six went into the Veterans Administration; four are going into Reconditioning in the Army; two are remaining in school for additional courses; and two went into private organizations.

EVEREST & JENNINGS 'TINY TOT' WHEEL CHAIR

The big news for little folks is the "Tiny Tot," a perfect minature of the famous Everest & Jennings "Standard Universal" Model wheel chair. The "Tiny Tot" is just the right size for children up to five years of age—a model long needed. Footboards are adjustable for different ages, and from its rugged chromium-plated tubular steel frame to its sturdy leatherette hammock seat and head-height back, the "Tiny Tot" is built to stand up under such a variety of abuse as only irrepressible childhood can devise. Upholstery in the "Tiny Tot" is U. S. Naugahyde Plastic, which in any of the attractive colors available is acid-resistant, water repellent and easily cleaned with soap and water.

Precision balancing, shock-absorbent "knee action," and double ballbearing caster wheels make the chair easier and safer for its small passenger to maneuver. Plastic grip pushing handles are provided for the attendant, and wheel handrims are available. When not in use, the chair folds with one easy motion into slim, compact, ready-for-traveling form.

Psychologically, the "Tiny Tot" has a tremendous value in speeding the rehabilitation of the handicapped youngster by promoting self-confidence and that all-important sense of security which is not found when the full sized chair is used. (*Inquiries may be addressed to your local dealer or to: Everest & Jennings, 761 N. Highland Ave., Los Angeles 38, Calif.*)

BOOK REVIEWS

(Continued from Page 25)

the field of rehabilitation. Needless to say, it is "must" reading for therapists dealing with tubercular patients. However, all therapists regardless of the nature of the handicap of patients they treat, can learn a great deal concerning the concepts, principles and techniques of rehabilitation from Dr. Pattison's fine book. O.C.

REMEMBER!

National Membersip Drive of 1952

GET ONE! OR MORE

"YOU ARE THE ONE"

That may or may not be the title of a popular song, but it applies to our membership problems. **You** the member must do two things for your organization.

1. RENEW NOW FOR '52 **2. GET ONE NEW MEMBER**

This will mean doubling our membership. This is our goal for the new year. Perhaps you can get more than one member, but at least try to sign one. Don't be the type of member who sits back and says, "Let the other fellow do it," or "Let the membership chairman do the worrying." The committee can be effective if you are making a real contribution. It doesn't matter how far the organization has progressed toward eventual medical recognition, medical guidance, advancement of educational facilities for Corrective Therapists and improvement of our rehabilitation techniques, if **You** the member will not follow up. There are many people who are intensely interested in rehabilitation problems, some are actually engaged in the work, who can qualify as active members; others who desire to help the disabled and to see our organization grow professionally, who may be enlisted as associate members. These people need your helping hand with a membership blank in it.

P.S.: By the way — have you an application blank in your pocket?

HY WETTSTEIN, Chairman
National Membership Committee

APPLICATION FOR ACTIVE MEMBERSHIP

Association for Physical and Mental Rehabilitation

(Mail to Louis M. Frazier Jr., 736 Graham Street, Memphis, Tennessee)

Name_____ Proposed by_____

Address_____ Date_____

Position_____ Location_____

Education_____ Major_____ Degrees_____
(college) (A major in Physical Education is required)

Training and Experience in Physical Rehabilitation_____
(One year under the direct supervision of a Medical Doctor is required)

_____

_____

Signature of Applicant_____

APPLICATION FOR ASSOCIATE MEMBERSHIP

Association for Physical and Mental Rehabilitation

(Mail to Louis M. Frazier Jr., 736 Graham Street, Memphis, Tennessee)

Name_____ Date_____

Address_____

Field of Interest_____

Proposed by_____ Address_____

Signature of Applicant_____

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Everest & Jennings folding wheel chairs are specially designed of chrome-plated, welded tubular steel for lightness and strength. They fold compactly to ten inches in one simple motion.

Models illustrated are also available in standard sizes. Everest & Jennings will cooperate with you in selecting the wheel chairs best suited to your patients' needs.

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Oakland 9, Calif.
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Miami 35, Florida
Tel. 9-4533

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Orthopedic Service Co.
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Surgical Selling Company
139 Forrest Ave., N.E.
Atlanta, Ga.

Surgical Selling Company,
1312 Walton Way,
Augusta, Ga.

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Chicago 24, Ill.
Sa 2-0330

V. Mueller & Co.,
330 South Honore Street,
Chicago 12, Ill.
Seeley 3-2180

Chicago Wheel Chair Co.,
1971 West Ogden Ave.,
Chicago 12, Ill.
Seeley 8-1111

Basil Moore
314 So. 6.h Street,
Marshall, Ill.
Tel.—334

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878 Mass. Ave.
Indianapolis 4, Ind.
Capitol—8414

Akron Surgical House, Inc.,
217-221 No. Pennsylvania St.,
Indianapolis 4, Ind.
Lincoln—1506

Rickrich Surgical Supply Co.,
801-803 West Indiana St.,
Evansville 10, Ind.

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Kay Surgical, Inc.
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Lexington, Ky.

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Baltimore 2, Md.
Mulberry 2847-8

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Jamaica—2-8700

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Holyoke, Mass.
Holyoke—4425

Mass. Surgical, Inc.
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P. L. Rider Company, Inc.
137-139 Chandler St.,
Worcester 2, Mass.
Tel. 2-7918

Lowell Medical Instrument Co.,
40 Prescott St.,
Lowell, Mass.
Tel. 6195

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Detroit 1, Mich.
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Joe F. Sullivan, Mgr.
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Battle Creek, Mich.
Tel. 2-3230

Medical Arts Surgical Supply Co.
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Grand Rapids 2, Mich.
Tel. 9-8274

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Acme Chair Company,
3230 Washington,
St. Louis 3, Missouri
Franklin—5700

American Chair Rental & Sales Co.
3107 Gillham Road,
Kansas City 3, Missouri
Valentine—0063

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Kay Surgical, Inc.
116 S. Roach St.,
Jackson 7, Miss.

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Zumbro Hotel Building,
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Tel. 6209

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St. Paul 1, Minn.
Cedar—1845

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Al 4-3510

Social Surgical Appliance Center,
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New York 3, N. Y.
Al 4-3509

Institutional Products Corp.,
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New York 13, N. Y.
Al 5-3700

Mercury Service Inc.,
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New York 21, N. Y.
Regent 7-7740

Lennon-Peek Surgical Co.
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Brooklyn, N. Y.
Main 5-6886

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Fa—7-3311, 6855

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Mount Vernon 7-1886

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Elmira, N. Y.
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418 N. George Street,
Rome, N. Y.
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1700 Main Street,
Buffalo 9, N. Y.
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Low Surgical Co., Inc.,
135-21 Northern Blvd.,
Flushing 54, N. Y.
Fl 3-7747

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National Hospital Supply Co., Inc.
38 Park Row,
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Schenectady 4, N. Y.
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1060 Broad Street,
Newark 2, N. J.
Mitchell 2-0207

Wm. R. Walsh Co.,
80 Avenue C,
Bayonne, N. J.
Bayonne 3-2881

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Lambert 3-6603

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Burlington 3-0052

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Wachtel's, Inc.
65 Haywood St.,
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J. E. Hanger of N. C., Inc.
801 W. Morgan St.,
Raleigh, N. C.
Tel. 3-1811

Carolina Surgical Supply Co.,
121-123 S. Wilmington St.,
Raleigh, N. C.
Tel. 3-8631

Winchester Surgical Supply Co.
119 East Seventh St.,
Charlotte 1, N. C.
Tel. 2-4109

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Leicy's, Inc.
1531-33 West Market St.,
Steubenville, Ohio
Tel. 2-5393

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435 Melrose Ave. at Collingwood Blvd.,
Toledo 10, Ohio
Adams 4123

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235 North High Street
Columbus 15, Ohio
Tel. Main 2722

Alexander Surgical Co.,
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Columbus, Ohio
Main 4860

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Raymond Furniture Co.
314 West Okmulgee Ave.,
Muskogee, Okla.
Tel. 3708

Oklahoma Physicians' Supply Co.
132 W. 3rd
Oklahoma City, Okla.
Tel. 3-3968

Mid-Continent Surgical Supply Co.
1330 South Boston,
Tulsa, Okla.
Tel. 2-8169

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Heyl Physicians Supply Co.
22 West Ninth St.,
Erie, Pa.
Tel. 2-6785

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Harrisburg, Pa.

Allied Surgical Supply Co., Inc.
137 N. Duke St.,
Lancaster, Pa.
Tel. 3-4804

Lancaster Surgical Supply Co.
148 N. Duke St.,
Lancaster, Pa.
Tel. 2-3175

William Tolcke,
2262 N. 7th Street,
Philadelphia 33, Pa.
Fremont 7-3667

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301 So. 11th St.,
Philadelphia 7, Pa.
Pennypacker 5-3363

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Montrose 1-5355

The Robert A. Fulton Co.
120 Oakland Ave.,
Pittsburgh 13, Pa.
Mayflower 1-1200

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Columbia, S. C.
Tel. 4-1639

TENNESSEE

Kay Surgical, Inc.
1144 Madison Ave.,
Memphis 1, Tenn.
Tel. 7-7415

Mid-South Oxygen Co.,
651 Jefferson Ave.,
Memphis 3, Tenn.
Tel. 8-4228

TEXAS

Melton-Clark, Inc.
515 W. 6th St.,
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Houston, Tex.

Blackwell Matress Co.
2610 Texas Ave.,
Lubbock, Tex.
Tel. 7962

Taylor Surgical Supplies
345 Sunset Court
Beaumont, Tex.
Tel. 4-8651

VIRGINIA

Wm. P. Swartz Jr. & Co., Inc.,
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Roanoke, Va.
Tel. 3-4483

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The Colson-Merriam Co.
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National 0011

WASHINGTON

Shipman Surgical Co.
313 University St.,
Seattle 1, Wash.
Main 6363

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Gardie A. Lee
402 West Madison St.,
Eau Claire, Wis.
Tel. 7758

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606 No. Broadway,
Milwaukee 2, Wis.
Mar. 8-0916

House of Bidwell, Inc.
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